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DOCUMENTS

OF THE

SCHOOL COMMITTEE

OF THE

CITY OF BOSTON,

FOR THE YEAR 1894.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

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SCHOOL DOCUMENT NO. 1 — 1894.

REPORT

OF THE

COMMITTEE ON SCHOOL HOUSES

ON

SCHOOL ACCOMMODATIONS.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

In School Committee,

Boston, February 13, 1894.

Ordered, That the Committee on School Houses be authorized to report in print on the subject of school accommodations.

Attest:

PHINEAS BATES,

Secretary,

REPORT.

In School Committee,
Boston, Feb. 13, 1894.

The Committee on School Houses submit the following report on the present needs of the city for new school-houses and sites.

All the items herein included have been before the Board at least a year, and some of them for much longer periods. This committee have previously carefully considered and reported upon every case. In several instances the City Council has been requested to grant the necessary appropriations, but were unable to do so, and other more pressing wants called for earlier action. Many sections of the city are absolutely suffering for proper and increased school accommodations, and our expense account for rents of hired rooms and buildings is rapidly increasing.

The list presented is not one of buildings which it would be only desirable to have, but a list of new school-houses which, after the most careful consideration and investigation, are found to be absolutely needed at the present time.

Normal School — Enlargement of. An order for increased accommodations was reported to the School Board Oct. 13, 1891, and referred to the Committee on School Houses. The need for increased room for the Normal School had been suggested at various times preceding the presentation of the order above referred to. The Committee on School Houses in their report submitted to the Board May

10, 1892, stated that they were fully convinced of the necessity for additional accommodations for this school, but there were certain matters which appeared to them of more urgent need at first, and the committee thought the enlargement of the Normal School-house, which would furnish the extra room needed, could be deferred until 1893. In their report presented in February, 1893, the committee asked for an appropriation of $75,000 for the enlargement of the Normal School-house, but the City Council did not grant the appropriation. Later in the year (Nov. 14, 1893) the City Council was again requested to grant an appropriation of $75,000 to enlarge this building. There is no doubt of the necessity for providing the much-needed additional room for this school, and we include the item in this report as one of the urgent needs of the present.

East Boston High School-house — Enlargement of. This school needs enlarged facilities for its work. A year ago (January, 1893) an order to enlarge the building by purchasing adjoining property was presented to the School Board. The Committee on School Houses, to whom the order was referred, reported that they had visited the premises and were of the opinion that additional room should be provided for this school, and that they intended to include a sufficient sum for this purpose in their requests for new school buildings this year. It is the opinion of this committee that adjoining property should be secured and made available for the use of the school. We recommend that an appropriation of $30,000 be asked for.

Dorchester High School-house — New Building. In 1890 the City Council was requested to enlarge the building so as to provide six additional rooms. This appropriation was not granted. Dec. 8, 1891, a petition signed by 467 residents of the Dorchester District, asking that a suitable drill-hall be provided for the Dorchester High School, was presented to the School Board. The Committee on School Houses, to

whom the petition was referred, reported Dec. 22, 1891, that the question of providing a drill-hall and suitable armory should be considered in connection with the subject of a new building for the school. The committee further stated that the need for increased accommodations is seriously felt; the building is overcrowded, the arrangement of the rooms inconvenient, and there is need for a drill-hall and other improvements. The City Council was asked to appropriate the sum of $12,000 for the purchase of a suitable site for a new building, and the appropriation was granted. The City Council of last year asked the School Committee to include in the estimates for 1894 a sum sufficient for a drill-shed for the school. The communication was presented at the final meeting of the School Committee in December last, too late to be acted upon by the Board last year. This committee reported (Jan. 23, 1894) that they concurred in the opinion of the committee of last year and believed the matter of a drill-hall should be considered in connection with the subject of a new building. The enlargement of the building is impracticable and would be very expensive. The time has come when a new building should be provided which would supply all the needs of the school. Your committee include in this report a request for an appropriation for a new building.

Cudworth Primary School-house — Enlargement of lot. The Cudworth School is the new Primary School-house on the corner of Paris, Havre, and Gore streets, East Boston. There is at present a space of only five feet from the rear of the building to the line of the lot, and in the opinion of this committee it is very desirable that additional land should be purchased to ensure the proper light for the building, and to reasonably guard against fire from neighboring buildings in the rear of the school-house. The City Council were requested last November to appropriate $5,000 for the purpose, and your committee repeat the request in this report.

Mechanic Arts High School. The Committee on Manual Training are of the opinion that land in the immediate vicinity of the building should be secured at as early a date as possible and an additional building erected thereon. Desirable and necessary as we believe this additional building to be, we think the furnishing and equipping of the present building more important. We repeat here requests which have previously been made for appropriations to furnish and equip the building.

SECOND DIVISION.

Frothingham District — New Primary School-house. In 1892 a lot of land for a new Primary School-house in this district was purchased, and a new building should be erected on this lot in the near future. A new building on the site of the Moulton-street School-house is now in process of erection, and this committee feel that the new building on the lot purchased in 1892 might be deferred until next year.

Harvard District — New Primary School-house. A new Primary School-house in this district is needed, and the demand for it is becoming more pressing every year, and ought to be provided next year.

THIRD DIVISION.

Baldwin School — Chardon Court. The undesirability of continuing a school in this building longer than is absolutely necessary has impressed itself strongly upon the minds of this committee. In a report submitted to the City Council in June, 1893, the Board stated that this school-house would not be occupied unless we were obliged to keep the children out of the streets. The question of providing increased school accommodations in the North and West Ends has received much attention for several years past. The committee believe that by erecting a new school

building at the West End the overcrowded schools of both the North and West Ends would be relieved, and the abandonment of the Chardon-street building made possible. The committee include in this report a request for an appropriation of $100,000 for a site and new school-house at the West End.

Hancock District — New Primary School-house. The rapidly increasing growth of the school population in the North End has called the attention of the Board for the past few years to that section. One of the Primary School-houses in that district is old and unfit for school purposes, and should be abandoned as soon as other accommodations for the children can be provided. The school buildings in that section are overcrowded, and repeated requests have been made for additional room. The new building would enable us to discard the old Sheafe-street school building and provide for the Primary children in the Hancock District. Last February the Common Council were requested to appropriate the sum of $100,000 for a site and building for a new Primary School-house. The appropriation was not granted, and the committee recommend that the Common Council be again requested to appropriate the same amount. By providing this new Primary School-house in the Hancock District, in a suitable location, the Primary schools of the Eliot District will, we believe, be given much needed relief. Another reason for urging the erection of this new building is that the managers of the North Bennett-street Industrial School have for years allowed the use of rooms by the city for classes in woodworking and for Kindergartens, without any charge for rent or for heating. They have expressed a wish that if it be convenient they would like to have the city provide other accommodations for the Kindergartens and wood-working shops before September next. Gratefully appreciating as we do the spirit and generosity of the managers of the North End Industrial School, and recognizing

the great help this school and its supporters have given to the cause of manual training, we do not think the city should occupy these rooms longer than is necessary. We should show our appreciation of the public-spirited managers who have permitted us so long to occupy these rooms rent free, by complying with their expressed wish to surrender the rooms by September, 1894.

FOURTH DIVISION.

Genesee Street — New Primary School-house. In the latter part of the year 1892 the Committee on School Houses reported that an enlargement of this building was very much needed. In February, 1893, the School Board asked for an appropriation of $20,000 for the purpose, and the City Council granted an appropriation of $22,500 for the enlargement and for Kindergarten purposes. The City Architect proceeded to prepare the necessary plans, when it became known that on account of the existing Building Laws it would not be practicable to enlarge the building. It now appears that it will be necessary to erect a new building to furnish proper accommodations for this school. It does not seem judicious to demolish the present building and rebuild on the same site. It would be better, in the opinion of this committee, to purchase another site and erect a new building thereon, using the present building in the meantime. After the new building is erected, the property on Genesee street could be sold if no longer needed. This committee recommend that the appropriation for the enlargement of the present building be transferred to an appropriation for a site and new building in place of the present school-house on Genesee street, and that an additional sum of $65,000 be appropriated for the same purpose.

SIXTH DIVISION.

New Primary School-house, Ward 15. A new Primary School-house is needed in Ward 15, between the John A. Andrew School-house and Mount Vernon street. A year ago the subject was presented, but was deferred on account of so many pressing needs and because the committee felt at that time that the providing of a new building in this locality could be deferred. We believe at the present time a building is needed, and the demands for additional accommodations are so rapidly increasing it should now be provided for. We include a request for an appropriation of $50,000 for a site and building.

SEVENTH DIVISION.

Dudley District — New Primary School-house, Vernon Street. In 1889 the insufficient accommodations in this building were brought to the attention of the Board. It seemed desirable to enlarge the lot, and the City Council appropriated the necessary sum, and an adjoining lot was purchased (in July, 1889) on which there was a dwelling-house. A room in this dwelling-house was fitted for a class, and has been so occupied for the past three years. A new building should be erected on this lot, and the committee recommend that an appropriation of $65,000 for an eight-room building be asked for.

Howard Avenue — New Primary School-house on Rear of the Lot. The question of increased accommodations for this building has been under consideration for more than a year. Upon consulting the City Architect, it was his opinion that instead of enlarging the building it would be better to erect a new building on the rear of the lot. The City Council were requested last October to appropriate $45,000 for a new building, and your committee include this amount in this report.

EIGHTH DIVISION.

Aberdeen — New School-house. This section (sometimes called Englewood) is far removed from any school building. Since 1891 petitions have been received from the residents of that section for school accommodations. In May last the City Council requested the School Board to consider and report upon the expediency of purchasing land and the erection of a building thereon. In their report the School Committee stated that the matter had been under consideration for some time, and it was expedient to provide a school building in that section. A four-room building will, we think, provide the needed accommodations for Grammar and Primary school pupils, and the committee recommend that the City Council be requested to appropriate the sum of $40,000 for a site and building in Aberdeen.

Beech Street, Roslindale — New Primary School-house. This district is growing rapidly. It is over a mile beyond the Charles Sumner District, towards Dedham and Hyde Park. In 1891, when the proposition to purchase a lot for this school-house was presented, the Committee on School Houses in their report stated, "This centre will in a few years, it is believed, be very densely populated, and we should provide not only for the present needs, but have land sufficient for a larger building at a future day." The lot was taken by right of eminent domain in 1892. At first it was thought a four-room building would be large enough, and in 1892 the City Council were requested to appropriate the sum of $25,000 for a four-room building. The appropriation was not granted. In calling attention to the new buildings needed, the following year, 1893, it was thought a six-room building would be needed. The Charles Sumner district is suffering for adequate and proper school accommodations. In that district alone there is paid for rent of buildings, which are inconvenient and without proper sani-

tary arrangements, the sum of $3,550 per year, which at four per cent. is the interest of $88,750, — more than double the amount asked for the new school-house. Your committee include in this report a request for an appropriation of $40,000 for a six-room building.

Gardner Street, West Roxbury — New Primary School-house. This building is proposed to take the place of the Baker-street School-house. In 1891, in presenting this matter the Committee on School Houses stated, "The building is very old, and was practically condemned as unfit for use years ago. It is situated less than a mile from the Dedham line, far from any other school, and the people residing here have felt bitterly their poor school accommodations." The money for the lot was appropriated and a site secured in 1891. In 1891 an appropriation for a new four-room building was asked for, but was not granted. Petitions from the residents of this district, strongly urging their claims for a proper school-house, have been received. Last year (February, 1893) the City Council was again requested to appropriate $25,000 for a four-room building on the lot purchased. The appropriation was not granted. The committee repeat the request for such an appropriation.

Roslindale — New Primary School-house, West of Railroad. In 1892 a petition was received from the residents of Roslindale, calling attention to the danger to their children because of express trains at school-hours, and the necessity for the children to cross the tracks in going to and coming from school, and asking that a new Primary School-house be provided for the western portion of the district in Roslindale. The Committee on School Houses, after investigation, were of the opinion that a new building was very much needed. The City Council were requested, February, 1893, to appropriate the sum of $6,000 for the purchase of a suitable site, but the appropriation was not granted. Your committee renew the request for an appropriation of $6,000 for the purchase of a site for a new building.

NINTH DIVISION.

Harris District — New Grammar School-house. In December, 1892, the City Council were requested to appropriate the sum of $9,000 for a site for a new Grammar School-house in this district. The request was repeated in 1893 (February), but no appropriation has yet been granted. A new building for this district is much needed, and this committee include a request for the appropriation of $9,000 for the purchase of a site this year, with the hope that next year an appropriation for the building may be obtained.

Field's Corner — New Primary School-house. — In December, 1892, the Board received a petition from the residents of that section of Dorchester calling attention "to the total lack of school facilities for small children in the rapidly growing district in which are Geneva avenue, Westville, Topliff, Draper, Leroy, Josephine, Dakota, Iowa, and other streets." This committee are of the opinion that a new Primary school-house should be erected in that section, and recommend that an appropriation of $50,000 for a site and building be asked for.

It is of the utmost importance that the new buildings recently completed should be provided with the necessary furniture to ensure their occupancy at the earliest possible moment. The buildings which should be so provided for are the Cudworth Primary School, Paris street, East Boston; and the Primary School, north of Broadway, South Boston. The committee include the necessary amounts in an order appended to this report.

For several years it has been considered desirable to make certain needed alterations in the Lewis School-house, and though several requests have been submitted to the City Council, no appropriation has been granted. Alterations in

the Norcross School-house are also needed, and the committee include the requests for the necessary appropriations in the order appended hereto.

The committee recommend the passage of the following orders.

For the Committee,

RICHARD C. HUMPHREYS,
Chairman.

Ordered, That the City Council be requested to appropriate the following amounts for new school-houses and sites, furnishing, and alterations of school buildings:

New Primary School-house, Gardner street, West Roxbury		$25,000
New Primary School-house, Beech street, Roslindale		40,000
New Primary School-house, Hancock District, site and building		100,000
New Primary School-house, Genesee street, site and building		65,000
New Primary School-house, Howard avenue		45,000
New Grammar School-house, Harris District, site,		9,000
Mechanic Arts High School:		
Completion of building	$45,000	
Equipment	27,500	
Furniture	5,000	
		77,500
New Primary School-house, Vernon street, Dudley District		65,000
Enlargement of Normal School-house		75,000
New School-house, Aberdeen, site and building		40,000
Carried forward,		$541,500

Brought forward,	$541,500
New Primary School-house, Roslindale, west of railroad, site	6,000
New building for Dorchester High School	100,000
Enlargement of lot and building of the East Boston High School	30,000
Enlargement of lot of Cudworth Primary School-house, East Boston	5,000
New Primary School-house, Ward 15, site and building	50,000
New Primary School-house, Field's Corner, site and building	50,000
New school-house, West End, site and building	100,000
Cudworth School, East Boston, furniture	4,000
Primary School, East Third street, furniture	4,000
Alterations Lewis School-house	5,000
Alterations Norcross School-house	3,000
	$898,500

Ordered, That the City Council be requested to transfer the appropriation of $22,500 for the enlargement of the Genesee-street Primary School-house, to an appropriation for a site and new building in place of the present school-house on Genesee street.

SCHOOL DOCUMENT NO. 2 — 1894.

REPORT

OF

COMMITTEE ON SUPPLIES.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

SIXTEENTH ANNUAL REPORT.

COMMITTEE ON SUPPLIES.

BOSTON, March, 1894.

To the School Committee:

The Committee on Supplies, in compliance with the Rules of the Board, present their annual report for the financial year 1893–94.

All the expenditures of the School Committee, with the exception of those for salaries and expenses incurred under the head of repairs and alterations of school-houses, are made under the direction of the Committee on Supplies, either directly or nominally; and all bills incurred for these expenditures are approved by this committee before payment is made by the City Treasurer.

Under date of Dec. 27, 1892, your committee submitted to the School Board, through the Committee on Accounts, an estimate of the amount needed for this department, and the same was approved by the School Committee.

The amount requested was $190,400, of which $82,500 were for fuel, gas, and water, and $107,900 for supplies and incidentals.

Owing to the reduction made by the City Council in the total estimate submitted, it became necessary for this committee to economize as much as possible in furnishing the schools with supplies, which resulted in an expenditure of only about eighty per cent. of the amount requested.

The expenditures for fuel, gas, and water are items over which this committee exercise only a nominal control, and exceeded the estimates by $4,166.99.

The expenditures for the year have been as follows:

Appropriation "Supplies and Incidentals:"		
Text-books	$20,141 71	
Writing-books	4,503 79	
Drawing-books	148 53	
Reference-books	1,343 01	
Record-books	452 35	
		$26,589 39
Books for supplementary reading		2,436 78
Stationery and drawing materials		13,293 06
Printing and stock		7,070 16
Cost of work for delivering supplies, including salaries, expenses of teaming, repairing apparatus, etc.		6,344 50
Manual training supplies		5,232 95
Janitors' and other supplies		3,946 11
Slates, diplomas, pencils, and erasers		3,431 33
Musical expenses:		
Instruments, repairs, and covers		2,147 25
Annual festival		2,319 97
Kindergarten supplies, including services of maids		2,016 09
Car and ferry tickets (refunded by State, $2,356.13)		1,917 71
Philosophical, chemical, and mathematical apparatus and supplies		1,606 38
School census		1,500 00
Removing ashes		822 50
Globes, maps, and charts		810 61
Expenses, World's Fair		2,770 02
Horse and carriage expenses		450 00
Reports of proceedings, School Committee		500 00
Extra clerk-hire		178 50
Military drill, arms, etc.		296 94
Advertising		310 33
District telegraph and telephones		285 35
Sewing materials		132 56
Teaming		118 95
Tuition, Town of Brookline		480 23
Entertainment, National Superintendents' Association		440 50
Carriage-hire		10 00
Sundry items		432 80
Total for supplies and incidentals (*carried forward*)		$87,890 97

Cost of supplies and incidentals (*brought forward*)		$87,890 97
Appropriation "Fuel, Gas, and Water:"		
Fuel	$74,634 19	
Gas (including electric lighting)	6,863 62	
Water	5,169 18	
Total for fuel, gas, and water		86,666 99
Gross expenditure		$174,557 96
Gross expenditures for schools, under the charge of the Committee on Supplies		$174,557 96
Less the following credits:		
Sale of books and supplies:		
High Schools	$65 90	
Grammar Schools	73 17	
Primary Schools	46 06	
Evening Schools	17 97	
Refunded by State, on account of travelling expenses pupils, Horace Mann School	2,356 13	
		2,559 23
Net expenditure		$171,998 73

The income collected during the year consisted of payments by pupils required to replace lost or injured books, and the amount received from the State of Massachusetts, refunded for travelling expenses of pupils in the Horace Mann School.

The net amount expended during the year shows a reduction of $5,844.78 in supplies and incidentals, and an increase of $8,794.24 in fuel, gas, and water; a total increase as compared with the cost for the previous year, of $2,949.46.

The average number of pupils belonging to the different grades of schools was 71,495. The average cost of this department per pupil for books, supplies, and incidentals was $1.19, and for fuel, gas, and water was $1.21; a total cost per pupil of $2.40.

The average number of pupils belonging to the different grades of schools the past year shows an increase of 2,525 over that of the year preceding, — the largest increase in pupils recorded since 1875–76.

The cost for supplying pupils under the free text-book law was less the past year than for any year (of twelve months) since it went into operation.

The value of the stock on hand at the close of the year amounted to $23,011.41, a reduction of $3,048.95 as compared with the value of the stock on hand Jan. 1, 1893. The

schools were supplied with the materials represented by this reduction, in addition to those purchased throughout the year, as indicated by the expenses.

The total amount expended for books, drawing materials, and stationery during the year was $42,319.23. Deducting $203.10, the income received, it leaves $42,116.13 as the net amount expended for these items, which include about all the materials required under the free text-book law. The fact that pupils were supplied at an average cost of about 60 cents for the year indicates the continued success of this law from a financial point of view.

The following table shows the net cost annually incurred by the School Committee for books, drawing materials, and stationery, since 1873–74:

1873–74	$67,937 47	1884–85	$80,779 82
1874–75	78,181 67	1885–86	58,760 77
1875–76	72,372 35	1886–87	42,890 13
1876–77	75,629 76	1887–88	43,721 29
1877–78	61,057 13	1888–89	46,087 54
1878–79	63,473 78	1889–90	50,182 82
1879–80	76,621 67	1890–91	52,988 28
1880–81	21,003 26	1891–92 (9 months)	50,201 01
1881–82	7,569 57		
1882–83	15,309 74	1892–93	47,723 15
1883–84	14,107 76	1893–94	42,116 13

In 1873–74 the average number of pupils belonging to the schools was 43,258. The past year the number was 71,495, an increase of sixty-five per cent.

In 1884–85 pupils were first supplied under the free text-book law, and the cost that year and the year following was great on account of the first supply being furnished. Since that time the cost for books and materials furnished pupils has averaged about $47,000 annually, — an amount much less than the cost fifteen to twenty years ago, when indigent pupils only were supplied.

The facts herewith presented regarding the cost in detail, the number of books furnished, and those lost and worn out, will show the workings of the plan in Boston since the law went into effect.

1884–85.

High Schools	$6 09 per pupil.
Grammar Schools	1 57 "
Primary Schools	36 "

1885–86.

High Schools	$4 05 per pupil.
Grammar Schools	1 35 "
Primary Schools	24 "

1886–87.

High Schools	$2 68 per pupil.
Grammar Schools	98 "
Primary Schools	17 "

1887–88.

High Schools	$2 33 per pupil.
Grammar Schools	98 "
Primary Schools	19 "

1888–89.

High Schools	$2 82 per pupil.
Grammar Schools	1 05 "
Primary Schools	21 "

1889–90.

High Schools	$2 60 per pupil.
Grammar Schools	89 "
Primary Schools	20 "

1890–91.

High Schools	$3 11 per pupil.
Grammar Schools	1 01 "
Primary Schools	23 "

1891–92.

High Schools	$2 45 per pupil.
Grammar Schools	1 03 "
Primary Schools	19 "

1892–93.

High Schools	$2 53 per pupil.
Grammar Schools	90 "
Primary Schools	23 "

1893–94.

High Schools	$2 12 per pupil.
Grammar Schools	82 "
Primary Schools	23 "

The average cost per pupil for the various grades each year for the past ten years was as follows:

High Schools	$3 08 per pupil.
Grammar Schools	1 06 "
Primary Schools	23 "

The average cost for books, drawing materials, and stationery for the ten years was about eighty cents per pupil, and doubtless with equal care this amount will prove sufficient in the future.

The number of books reported lost during the year was as follows:

High Schools	134
Grammar Schools	690
Primary Schools	433
Evening Schools	452
Total number reported lost	1,709
In 1892-93 the number was	1,521
" 1891-92 " " "	1,140
" 1890-91 " " "	1.277
" 1889-90 " " "	1,065
" 1888-89 " " "	749
" 1887-88 " " "	662
" 1886-87 " " "	664
" 1885-86 " " "	731
Total number of books lost in nine years	9,518

The number of books returned from the schools as worn out during the year was as follows:

High Schools	4,282
Grammar Schools	24,710
Primary Schools	12,772
Total number returned as worn out	41,764
In 1892-93 the number was	44,534
" 1891-92 " " "	38,317
" 1890-91 " " "	29,204
" 1889-90 " " "	23,566
" 1888-89 " " "	25,397
" 1887-88 " " "	14,399
" 1886-87 " " "	6,398
" 1885-86 " " "	3,582
Total number of worn-out books in nine years	227,161

Since August, 1884, when the free text-book law went into effect, the schools have been supplied with 650,541 books. Of this number, 236,679, or about thirty-six per cent., have been returned as worn out or reported lost. These figures indicate great care in regard to the books.

The number of books charged Jan. 1, 1894, ordered by the principals and used as text-books by the pupils of the different High Schools, was as follows:

Normal School	1,505
Latin School	14,224
Girls' Latin School	6,156
English High School	13,994
Girls' High School	15,212
Roxbury High School	10,318
Charlestown High School	3,890
East Boston High School	2,726
Dorchester High School	4,381
West Roxbury High School	2,537
Brighton High School	2,273
Mechanic Arts High School	564
Total number in High Schools	77,780

The number of text-books charged to the various High Schools would permit the loaning of twenty books to each pupil.

The text-books charged Jan. 1, 1894, to the several Primary teachers were as follows:

Franklin Advanced First Reader	12,207
" Second Reader	9,985
" Advanced Second Reader	8,622
" Third Reader	9,372
" Primary Arithmetic	10,554
National First Music Reader	9,744
Normal First Music Reader	2,573
First Lessons in Natural History	5,479
Total number in Primary Schools	68,536

The following text-books were charged to the Grammar Schools, Jan. 1, 1894, having been ordered during the past nine years for the use of the pupils:

Blaisdell's Physiology for Little Folks	6,321
Cooley's Philosophy	3,278
First Lessons in Natural History	2,916
Franklin Advanced Third Reader	8,770
" Fourth Reader	8,784
" Intermediate Reader	6,494
" Fifth Reader	10,446
" Sixth Reader	3,263
" Written Arithmetic	19,347
" Elementary Arithmetic	14,838
Small Geography	15,625
Large Geography	17,165
Higginson's History	6,100
Masterpieces of American Literature	2,891
Meservey's Bookkeeping	2,971
Metcalf's Language Exercises	13,415
Montgomery's History	5,923
Normal First Music Reader	2,630
" Second "	6,364
" Third "	2,519
Intermediate Music Reader	9,962
Fourth Music Reader	8,100
National Second Music Reader	3,270
" Third "	2,387
Mowry's Civil Government	3,151
Sheldon-Barnes' History	1,643
Smith's Physiology	4,951
Stone's History of England	2,545
Stowell's A Healthy Body	6,110
Swinton's Language Lessons	6,313
Tweed's Grammar	7,663
Worcester's Dictionary	15,566
Worcester's Spelling-book	22,256
Total number in Grammar Schools	253,977

The number of text-books charged to the Grammar Schools permits the loaning of about eight books, and would cost to replace about $4.00 for each pupil.

The number sent to the Evening High School and Branch Schools in Charlestown and East Boston was 5,019. The Evening Elementary Schools called for 8,550 books, making a total of 13,569 books sent to all Evening Schools.

The total number of text-books owned by the city and now in the schools, if replaced at publishers' prices, would cost about as follows:

High Schools	77,780	books at a cost of	$48,612 50
Grammar Schools	253,977	" " "	126,988 50
Primary Schools	68,536	" " "	13,532 00
Evening Schools	13,569	" " "	5,020 00
Total number	413,862	" costing	$194,153 00

The number of books now charged to the various schools averages about six books for each pupil, and, if replaced at publishers' prices, would cost about $2.75 per pupil.

To apportion the cost of this department among the several grades of schools, it is necessary to divide the expenditures made for items not chargeable to any particular grade, such as printing, advertising, and similar expenses, *pro rata* among the different grades.

The following are expenditures of this description:

Annual festival	$2,319 97
Horses and carriages, including repairs and carriage-hire	460 00
Advertising	310 33
Expenses delivering supplies, etc.	6,344 50
Printing, printing-stock, binding, and postage	7,794 16
Car and ferry tickets for messengers and E.B. pupils	351 04
Telephones and District Telegraph	285 35
Transportation. instructor of military drill, etc.	296 94
Tuning and repairing pianos	1,320 00
Diplomas	1,706 92
Express and carting, including fares	118 95
Census, including books for same	1,500 00
Extra clerk-hire	178 50
Reporting proceedings of School Committee	500 00
Removing ashes	822 50
Tuition of pupils, Brookline schools	480 23
Refreshments	19 00
Entertainment, National Superintendents' Association	440 50
Photographs, frames, etc., World's Fair	2,770 02
Washing towels	46 05
Sundry items	117 67
Total	$28,182 63

The following shows the net expenditures properly chargeable to the different grades of schools for all items under control of this committee:

HIGH SCHOOLS.

Books, drawing materials, and stationery	$8,327 88
Apparatus and chemical supplies	1,656 74
Fuel, gas, and water	12,234 85
Janitors' supplies	430 81
Miscellaneous items	50 90
Proportion of expenses not chargeable to any particular school	4,482 38
	$27,183 56
Income from sale of books to pupils	65 90
Net cost of High Schools	$27,117 66

Average number of pupils belonging, 3,892. Average cost per pupil, $6.97.

GRAMMAR SCHOOLS.

Books, drawing materials, and stationery	$26,842 89
Apparatus	37 49
Fuel, gas, and water	38,534 90
Janitors' supplies	1,693 81
Charts, maps, and globes	412 80
Miscellaneous items	2,205 23
Proportion of expenses not chargeable to any particular school	13,767 72
	$83,494 84
Income from sale of books to pupils	73 17
Net cost of Grammar Schools	$83,421 67

Average number of pupils belonging, 32,700. Average cost per pupil, $2.55.

PRIMARY SCHOOLS.

Books, drawing materials, and stationery	$6,082 34
Apparatus	47 27
Fuel, gas, and water	28,611 21
Janitors' supplies	1,666 23
Miscellaneous items	1,580 81
Proportion of expenses not chargeable to any particular school	7,500 76
	$45,488 62
Income from sale of books to pupils	46 06
Net cost for Primary Schools	$45,442 56

Average number of pupils belonging, 26,141. Average cost per pupil, $1.74.

EVENING HIGH AND ELEMENTARY SCHOOLS.

Books, drawing materials, and stationery	$1,688 03
Fuel and gas	3,812 91
Janitors' supplies	8 87
Miscellaneous items	22 64
Proportion of expenses not chargeable to any particular school	1,092 37
	$6,624 82
Income from sale of books to pupils	17 97
Net cost of Evening Schools	$6,606 85

Average number of pupils belonging, 5,607. Average cost per pupil, $1.18.

EVENING DRAWING SCHOOLS.

Drawing materials and stationery	$633 26
Gas	625 20
Janitors' supplies	4 66
Miscellaneous items	9 13
Proportion of expenses not chargeable to any particular school	251 21
Net cost of Evening Drawing Schools	$1,523 46

Average number of pupils belonging, 632. Average cost per pupil, $2.41.

HORACE MANN SCHOOL.

Books, drawing materials, and stationery	$96 42
Fuel, gas, and water	609 27
Janitors' supplies	9 12
Travelling expenses of pupils	1,878 28
Miscellaneous items	5 33
Proportion of expenses not chargeable to any particular school	513 07
	$3,111 49
Income from State, travelling expenses of pupils	2,356 13
Net cost of Horace Mann School	$755 36

Average number of pupils belonging, 96. Average cost per pupil, $7.87.

KINDERGARTENS.

Books, drawing materials, and stationery	$24 39
Kindergarten materials	1,100 24
Janitors' supplies	28 30
Piano and stool	176 50
Fuel, gas, and water	639 53
Services of maids	935 85
Miscellaneous items	7 90
Proportion of expenses not chargeable to any particular school	575 12
Net cost of Kindergartens	$3,487 83

Average number of pupils belonging, 2,411. Average cost per pupil, $1.45.

MANUAL TRAINING SCHOOLS.

Lumber	$1,379 05
Hardware, including tools for outfits	1,086 85
Books, drawing materials, and stationery	58 10
Crockery, groceries, and kitchen materials	1,116 01
Miscellaneous, including models	1,058 67
Janitors' supplies	35 39
Fuel and gas	1,029 32
Net cost of Manual Training Schools	$5,763 39

SCHOOL COMMITTEE AND OFFICERS.

Books, drawing materials, and stationery	$307 26
Fuel, gas, and water	569 80
Janitors' supplies	51 62
Miscellaneous items	22
Net cost for School Committee and Officers	$928 90

RECAPITULATION.

Net cost for supplies properly chargeable to:		
High Schools		$27,117 66
Grammar Schools		83,421 67
Primary Schools		45,442 56
Evening High and Elementary Schools		6,606 85
Evening Drawing Schools		1,523 46
Horace Mann School		755 36
Kindergartens		3,487 83
Manual Training Schools		5,763 39
School Committee and Officers		928 90
		$175,047 68
Stock on hand Jan. 1, 1893	$26,060 36	
Stock on hand Jan. 1, 1894	23,011 41	
Stock delivered, purchased previous to Jan. 1, 1893		3,048 95
Total net amount expended		$171,998 73

The foregoing represents the total net cost of the various grades of schools, exclusive of salaries, and is the expenditure made, not only for supplying pupils, but for furnishing the schools with the more permanent material which is constantly being required. It also includes the cost for fuel, gas, and water.

Under the head of supplementary reading, the sum of $2,436.78 was expended during the year. The School Committee is obliged by law to furnish pupils with text-books and supplies; but in the matter of collateral reading, the Committee on Supplies must be guided in a great measure by the condition of the appropriation, this item being one of the few wherein expenses can be curtailed when the money is limited. This committee, however, are of the opinion that it would have proved a valuable expenditure for the schools, had they been able to expend twice the amount available for this purpose during the past few years.

During the year two square pianos were purchased from the Ivers & Pond Piano Co., at a cost of $174 each, and sent to the Blackinton Primary School, East Boston, and the Shurtleff Kindergarten, South Boston. A grand piano was purchased from the Henry F. Miller & Sons Piano Co., at an expense of $365, and sent to the Prescott School, Charlestown. In addition, the piano in the Lawrence School, South Boston, was repaired at an expense of $60.

The Perkins Institution attended to the tuning and care of pianos for the sum of $1,320.

The 167 pianos now in the schools represent a cost of about $51,500, and are distributed among the various grades as follows:

High Schools	14
Grammar Schools	61
Primary Schools	63
Kindergartens	29
Total number of pianos	167

The last report of the tuner stated that, with few exceptions, the pianos are in good or fair condition.

The annual festival took place in Mechanics Building, on Saturday, July 1, under the direction of a special committee appointed for the purpose. The following expenditures

were incurred for the festival, the bills for the same being submitted to the Committee on Supplies for approval:

Rent of Mechanics Hall	$250 00
Band	104 00
Bouquets, 2,800 at 40 cents	1,120 00
Collation	692 75
Transportation	106 23
Sundry items	46 99
Total cost of annual festival	$2,319 97

During the year bills were approved to the amount of $2,770.02 on account of the Columbian Exposition. This included the expenses of the Director of Drawing to Chicago, in accordance with the vote of the School Board. There were also expended $1,061.65 from the appropriation of the year previous, making a total expenditure of $3,831.67 incurred by the city for this purpose. This amount does not include any compensation for employees of the School Department for time spent in preparing and arranging the exhibit.

During the year, the second classes of the Grammar Schools were supplied with 2,300 sets of drawing models, and 1,850 drawing kits, comprising drawing-boards, triangles, compasses, thumb-tacks, paper, rulers, etc., at an expense for both of $1,284.50.

At the meeting of the School Board held March 28, 1893, an order was offered and referred to this committee that they consider the expediency of supplying Manila paper-pads, for use in place of slates in the schools of the city.

The opinion of the principals who were invited to be present when the order was under consideration seemed to be favorable to its adoption. From the increased amount of paper called for, especially in the Primary grades, it is evident that the change, to a considerable extent, from slates to paper is gradually being made without legislation; but the committee did not feel justified in recommending the entire abolition of slates, on account of the large expense involved. As an illustration, during the past year the schools used

24,375 slates, which cost, including ruling, $787.65, and the expense for paper pads necessary to do the same amount of work would have been ten times that sum.

Although the change would probably be acceptable to a large majority of the teachers, doubtless there are many among those longest in the service who would prefer to continue the use of slates, especially for doing examples in arithmetic.

The public schools consumed 13,322 tons of coal the past year, as compared with 12,288 tons used in the year previous. The contract for furnishing the coal was awarded to Messrs. H. G. Jordan & Co., at the rate of $5.20 per ton, which included the housing, exclusive of West Roxbury, the price for that territory being fixed at $5.65 per ton.

There were over 1,000 tons more coal used the past year than in any year preceding. The modern methods adopted for heating and ventilating the new school buildings are largely responsible for this increase. The total amount paid for coal, including the weigher's salary of $750, was $72,339.07.

The Overseers of the Poor furnished the wood, and received $2,295.12 for the 202 cords required by the schools.

Gas and electric lighting cost $6,863.62, an increase of $202.45 over the cost for the year preceding, and the largest amount ever paid for this item in any one year, notwithstanding the considerable reduction in the cost for gas per thousand feet. Early in the year the Edison Electric Illuminating Company put wires into the Eliot School, and for about six months their system of lighting has been in operation. It is admitted by all concerned that the change from gas to electric lighting is of great benefit; but the expense, which will average about $100 per month during the winter (more than three times the cost for gas), will probably prevent this system of lighting from being generally adopted.

The city of Boston charged the School Committee the sum of $5,169.18 for water used in the schools during the year.

The total cost for fuel, gas, and water the past year was $86,666.99, an increase of $8,794.24.

An increase of about ten per cent. in the consumption of fuel, gas, and water in one year is an indication that the cost for carrying on the schools must necessarily increase from year to year. The janitors, without doubt, use as much economy in the use of these articles as the circumstances under which they labor will permit.

The total cost of fuel, gas, and water since 1876–77 has been as follows:

1876–77	$55,490 16	1886–87	$57,216 67
1877–78	53,321 70	1887–88	71,048 76
1878–79	47,678 94	1888–89	75,067 07
1879–80	40,920 22	1889–90	73,580 27
1880–81	57,483 62	1890–91	69,524 54
1881–82	57,593 17	1891–92 (9 months)	56,665 22
1882–83	60,863 11		
1883–84	66,068 59	1892–93	77,872 75
1884–85	61,325 41	1893–94	86,666 99
1885–86	58,417 53		

On the following page a comparative statement is given of expenses that come under the head of "supplies and incidentals." It includes the entire expenses of the School Committee, excepting for salaries, fuel, gas, and water, and repairs. It shows that in 1876–77, without free books, the cost was $2.44 per pupil, while the cost the past year, with free books, was $1.19 per pupil.

Respectfully submitted,

RICHARD C. HUMPHREYS,
Chairman.
HENRY D. HUGGAN,
SAMUEL H. WISE,
ERNEST C. MARSHALL,
ALFRED BLANCHARD,
Committee on Supplies.

Comparative statement of net expenditures of the School Committee for the past eighteen years, under the item of "Supplies and Incidentals," which includes all the running expenses except salaries paid instructors, officers and janitors, fuel, gas, water, furniture, and repairs:

Year.	Supplies and Incidentals.	No. of Pupils.	Rate per Pupil.
1876–77	$122,673 25	50,308	$2 44
1877–78	110,680 46	51,759	2 14
1878–79	111,343 68	53,262	2 09
1879–80	113,243 02	53,981	2 10
1880–81	65,562 93	54,712	1 20
1881–82	44,788 33	55,638	80
1882–83	46,858 31	57,554	81
1883–84	46,966 55	58,788	80
1884–85	118,123 97	59,706	1 98
1885–86	87,528 30	61,259	1 43
1886–87	67,103 54	62,259	1 08
1887–88	69,170 87	62,226	1 11
1888–89	77,407 97	64,584	1 20
1889–90	86,162 83	66,003	1 31
1890–91	85,108 95	67,022	1 27
1891–92 (9 mos.)	79,217 13	67,696	1 17
1892–93	91,176 52	68,970	1 32
1893–94	85,331 74	71,495	1 19

The total amount expended during the year, $174,557.96, was paid to the following-named parties:

H. G. Jordan & Co.,	$54,051	12	
L. G. Burnham & Co.	17,446	12	
Carter, Rice, & Co.	10,189	15	
Sheldon & Co.	7,359	70	
Services in store-room	6,344	50	
City of Boston	5,319	18	
Rockwell & Churchill	4,748	07	
American Book Co.	3,589	62	
E. H. Butler & Co.	3,200	00	
Ginn & Co.	2,892	23	
Boston Gas Light Co.	2,660	73	
George S. Perry & Co.,	2,643	11	
Overseers of the Poor	2,295	12	
Sarah Fuller	1,878	28	
J. L. Hammett	1,635	94	
A. H. Folsom	1,544	70	
John W. Slavin	1,500	00	
Eagle Pencil Co.	1,410	85	
John P. Dale & Co.	1,341	06	
Perkins Institution	1,320	00	
Lee & Shepard	1,167	28	
T. D. Cook & Co.	1,116	75	
Charlestown Gas & Electric Co.	1,093	02	
Joseph Dixon Crucible Co.	1,010	11	
Roxbury Gas Light Co.,	966	78	
American Bank Note Co.	923	41	
William Curtis' Sons	919	38	
Chandler & Barber	880	52	
Wadsworth, Howland, & Co.	824	26	
Carried forward,	$142,270	99	

Brought forward,	$142,270	99	
P. Sullivan	822	50	
Houghton, Mifflin, & Co.,	819	46	
United States	809	00	
Samuel Hosea, Jr.	779	33	
Boston School Supply Co.	747	78	
Silver, Burdett, & Co.,	722	92	
Educational Publishing Co.	689	12	
John L. Whiting & Son,	663	90	
Thompson, Brown, & Co.,	648	82	
J. G. Roberts & Co.	647	27	
Charles F. Shourds & Co.,	634	38	
South Boston Gas Light Co.,	618	64	
Willard Small	615	48	
D. C. Heath & Co.	552	23	
Boston Transcript Co.,	539	50	
Franklin Educational Co.,	510	43	
William Ware & Co.	510	35	
East Boston Gas Co.	507	32	
Town of Brookline	480	23	
Murphy, Leavens, & Co.,	471	69	
Samuel Hobbs & Co.	469	84	
Leach, Shewell, & Sanborn,	441	43	
Harper & Bros.	436	77	
Carter, Dinsmore, & Co.,	408	45	
Blacker & Shepard	403	74	
Cutler Bros. & Co.	373	15	
Shepard & Samuel	370	68	
University Pub. Co.	369	80	
Henry F. Miller & Sons Piano Co.	365	00	
Carried forward,	$158,700	20	

Brought forward,	$158,700 20
Brooks, Baldwin, & Robbins	361 11
Ivers & Pond Piano Co.,	353 00
Smith & Miller	322 60
J Fred Sayer Jr.	311 22
Greenwood Bros.	301 50
H. C. Kendal	299 90
Carl Schoenhof	296 03
Heliotype Printing Co.,	271 94
E. L. Brown	269 85
Charles H Stephan	264 25
James Furfey	256 42
Mass. Charitable Mechanic Assn	250 00
Jamaica Plain Gas Light Co.	248 79
N. E. Telephone & Telegraph Co.	246 60
Longmans, Green, & Co.,	245 00
George H. Walker & Co.,	240 00
Frost & Adams	239 62
Boston Electric Light Co.,	238 60
Brookline Gas Light Co.,	221 91
A. K. Allstine	196 95
Charlotte N S. Horner,	195 00
Hobart Moore	187 00
Edison Electric Illg. Co. of Boston	183 02
E. P Jackson	174 52
Baldwin's Boston Cadet Band	169 00
Julia M. Murphy	168 38
J. P. Clark	160 00
James Delay	160 00
Thomas H. Meade	160 00
Norton Bros.	160 00
B. Illfelder & Co.	158 00
Allyn & Bacon	151 60
Henry Hitchings	150 00
Brown, Durrell, & Co.,	147 78
Edmands & Hooper	145 00
Carried forward,	$166,604 79

Brought forward,	$166,604 79
De Wolfe, Fiske, & Co.,	139 08
James A. Hearn & Co.,	138 00
A. P. Gage & Son	134 46
Boston Woven Hose & Rubber Co.	131 05
Edwin P. Seaver	127 52
Lalance & Grosjean Mfg. Co.	127 36
W. H. Partridge	126 00
Dorchester Gas Light Co.	124 81
A. C. Bowditch & Co.	120 00
Amos M. Keirstead	120 00
John Mooney	120 00
J. Newman & Sons	120 00
W J Stokes	120 00
Edward E. Babb & Co.,	115 22
Cobb, Bates, & Yerxa,	113 27
Amabel G E. Hope	111 21
Columbia Rubber Works Co.	110 00
Angeline M. Weaver	109 43
West End St. Railway Co.	106 23
Joseph Watrous	105 00
Althea W. Somes	102 80
Mary C. Mitchell	99 17
Henry Holt & Co.	98 24
Thorp & Martin Mfg. Co.	95 65
Charles C. Gerry	91 00
Ellen L. Duff	88 85
Wheeler, Blodgett, & Co.	87 31
Mary A. Tilton	87 25
Maynard, Merrill, & Co.,	78 75
Charles C. Harvey & Co.	78 00
Spencerian Pen Co.	75 00
P. Lyman & Sons	73 66
Emeline E. Torrey	72 82
Carried forward,	$170,151 93

Brought forward,	$170,151 93
Josephine Morris . .	72 29
Ada G. Murdoch . .	72 00
Suburban Light & Power Co.	62 50
Wyckoff, Seamans, & Benedict	61 60
Turner & Seymour Mfg. Co.	60 48
D. L. Taylor	60 00
W. A. Twombly . .	60 00
Leonard & Ellis . . .	59 20
Mass. Bible Society . .	57 60
Marion G. Cullen . .	57 00
Mrs. M. T. Mears . .	56 85
Eberhard Faber . . .	54 20
Estes & Lauriat . . .	52 50
Ceiley & Wright . . .	52 47
George H. Conley . .	51 64
Otis Clapp & Son . .	51 33
Prang Educational Co.,	50 07
Cutter Tower Co. . .	50 00
Minna Kettell . . .	48 50
Elizabeth F. McLaughlin	48 25
D. Appleton & Co. . .	48 13
Delphine Allard . . .	48 00
Abbott D. Gill . . .	47 62
A. J. Wilkinson & Co.,	46 77
Mrs. S. Wetherbee . .	46 05
Boston Daily Advertiser,	45 18
Ames Plow Co. . . .	44 57
W. B. Foster	44 01
S. R. Reading & Co. .	44 00
Annie Shapleigh . .	43 50
Post Publishing Co. .	43 25
Ellen L. Sampson . .	41 75
Curtis Davis & Co. . .	40 00
Traveller Publishing Co.,	39 46
Johnson & Morrison .	37 98
Globe Newspaper Co.,	36 13
Emilie F. Bethmann .	36 00
Carried forward,	$172,022 81

Brought forward,	$172,022 81
Boston Herald Co. . .	35 62
Nellie Holland . . .	34 75
Journal Newspaper Co.,	34 10
William Read & Sons .	33 29
Mary E. Hester . . .	32 55
Ella Buckley	30 75
Nellie Hannon . . .	30 75
Lizzie Wood	30 50
Helen L. Chandler . .	30 25
Jennie Fincklestein .	29 25
Violet Bertha Paris . .	29 25
Mary Henderson . .	29 00
George C. Mann . .	28 99
Carrie Lyons	28 75
Elsie Gordon	27 61
Owners S.S. "Indian,"	27 38
C. M. Hussey . . .	27 00
Hester Condon . . .	26 25
J. W. Remmonds . .	26 08
John C. Haynes & Co. .	25 92
Emma Andrew . . .	25 55
Charles J. Edmands .	25 48
H. C. Shaw	25 00
Alice G. Nickelson . .	24 85
Isabella Shove . . .	24 71
A. G. Cheever & Co. .	24 25
P. W. McCarron . . .	24 00
D. Lothrop Co. . . .	23 60
Mary Libby	23 50
Boston Evening Record,	23 25
Beacon Lithographic Co.,	22 50
Thomas Groom & Co. .	22 50
John S. Krebs . . .	22 40
Whitall, Tatum, & Co.,	21 34
M. Lewis Crosby . .	21 27
Canton M'f'g & Bleaching Co.	21 00
Forbes Lith. M'f'g Co.	20 98
George Jepson . . .	20 92
Drivers' Union Ice Co. .	20 00
Harriet I. Davis . . .	19 86
Carried forward,	$173,077 81

Brought forward,	$173,077 81	*Brought forward,*	$173,390 06
Underhill Bros.	19 62	Emma S. Harmon	17 25
J. J. McNutt	19 50	Louise Timmins	17 25
Columbian Printing Co.	19 35	Mary Mangini	17 00
Capen, Sprague, & Co.,	19 23	Bessie Merrill	17 00
J. R. Whipple & Co.	19 00	Clara H. Balch	16 75
Hannah Cowan	18 50	B. F. Eddy	16 65
Alex. L. Goode	18 50	Geo. Nelson Beals	16 50
Mary Porter	18 50	Marie Backoff	15 75
Rosa Reed	18 50	John Donnelly & Sons,	15 50
E. M. Cundall	18 00	Timothy Donahoe	15 28
H. E. Goss	18 00	Boston District Messenger Co.	15 05
Roberts Bros.	18 00	Five Cent Parcel Delivery Co.	15 00
Delia Sullivan	17 75	Sundry bills less than $15	972 92
E. W. Harnden	17 50		
Annie Kane	17 50	Total expenditure,	$174,557 96
Elizabeth T. O'Connell,	17 50		
Belknap & Co.	17 30		
Carried forward,	$173,390 06		

Requisitions of the Committee on Supplies to the Committee on Accounts:

1893.	Fuel, Gas, and Water.	Incidentals.	Totals.
February	$4,918 64	$6,008 30	$10,926 94
March	5,065 51	6,528 71	11,594 22
April	3,770 97	3,636 44	7,407 41
May	8,477 65	5,117 69	13,595 34
June	2,907 62	10,726 14	13,633 76
July	498 28	8,219 43	8,717 71
August	11,140 90	8,898 61	20,039 51
September	37,393 12	20,755 00	58,148 12
October	9,627 17	5,053 76	14,680 93
November	623 79	4,959 44	5,583 23
December	979 61	3,673 12	4,652 73
1894.			
January	1,263 73	4,314 33	5,578 06
Totals	$86,666 99	$87,890 97	$174,557 96

TARIFF OF SUPPLIES.

The following tariffs for High and Grammar Schools show the average amount of each article annually sent to the schools for use of the pupils and instructors during the past few years.

HIGH SCHOOLS.

PUPILS.

Examination Paper	12 reams to each 100 pupils.
Letter Paper	9 reams to each 100 pupils.
Note Paper	1½ reams to each 100 pupils.
Composition Books	7 to each pupil.
Pens	10 gross to each 100 pupils.
Penholders	1½ gross to each 100 pupils.
Drawing Pencils	3 to each pupil.
Common Pencils	5 to each pupil.
Rubber	3 pieces to each pupil.
Blotters	3 to each pupil.

TEACHERS.

Letter Paper	4 quires to each teacher.
Note Paper	6 quires to each teacher.
Note Envelopes	4 packages to each teacher.
Pens	1 gross to each 10 teachers.
Mucilage	1 bottle to each teacher.
Blotters	1 package to each teacher.
Penholders	3 to each teacher.
Drawing Pencils	5 to each teacher.
Common Pencils	5 to each teacher.
Rubber	3 pieces to each teacher.

Each principal equivalent to two teachers.

SCHOOLS.

Ink	4 gallons to each 100 pupils.
Chalk	9 boxes to each 100 pupils.
Blackboard Erasers	20 to each 100 pupils.
Recitation Cards	400 to each 100 pupils.
Mucilage	2 quarts to each building.
Large Envelopes	100 to each building.

Supplementary Reading, Record Books, Apparatus, Drawing Instruments, Maps, Globes, Charts, etc., as voted by the committee.

GRAMMAR SCHOOLS.

PUPILS.

Examination Paper	2	reams to each 100 pupils.
Letter Paper	4	reams to each 100 pupils.
Note Paper	28	quires to each 100 pupils.
Composition Books	2½	to each pupil.
Pens	9	gross to each 100 pupils.
Penholders	1	gross to each 100 pupils.
Drawing Pencils	2½	to each pupil.
Common Pencils	2	to each pupil.
Rubber	2	pieces to each pupil.
Drawing Paper for Maps, etc.	1½	reams to each 100 pupils.
Blank Books for Spelling	150	to each 100 pupils.
Blotters	2	to each pupil.
Slate Pencils	7	to each pupil.

TEACHERS.

Letter Paper	3	quires to each teacher.
Note Paper	5	quires to each teacher.
Note Envelopes	3	packages to each teacher.
Penholders	2	to each teacher.
Drawing Pencils	3	to each teacher.
Common Pencils	4	to each teacher.
Rubber	2	pieces to each teacher.
Pens	1	gross to each 10 teachers.
Mucilage	1	bottle to each teacher.
Blotters	1	package to each teacher.

Each principal equivalent to two teachers.

SCHOOLS.

Ink	3	gallons to each 100 pupils.
Chalk	3	gross to each 100 pupils.
Blackboard Erasers	10	to each 100 pupils.
Slates	35	to each 100 pupils.
Recitation Cards	200	to each 100 pupils.
Mucilage	1	quart to each building.
Large Envelopes	100	to each building.

Supplementary Reading, Record Books, Apparatus, Drawing Instruments, Maps, Globes, Charts, etc., as voted by the committee.

PRIMARY SCHOOLS.

PUPILS.

Slate Pencils, Lead Pencils, Rubber, Paper, and Clay, as wanted.

TEACHERS.

1 quire Letter Paper.	2 pieces Rubber.
½ ream Note Paper.	4 Common Lead Pencils.
10 Large Envelopes.	2 Penholders.
2 packages Note Envelopes.	15 Pens.
1 small bottle Mucilage.	1 qt.-bottle Ink to each building.

SCHOOLS.

Scissors	60 to each building.
Chalk	3 gross to each 100 pupils.
Slates	50 to each 100 pupils.

Supplementary Reading, Record Books, Primary-school Paper, Charts, Blackboard Erasers, etc., as voted by the committee.

SCHOOL DOCUMENT NO. 3—1894.

EXPENDITURES FOR THE PUBLIC SCHOOLS.

REPORT

OF

COMMITTEE ON ACCOUNTS.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

TWENTY-SIXTH ANNUAL REPORT.

COMMITTEE ON ACCOUNTS.

BOSTON, March 1, 1894.

To the School Committee:

The Committee on Accounts, in compliance with the Rules of the Board, herewith submit their report for the financial year 1893–94.

The Auditing Clerk is required by the Regulations to submit, at the close of each financial year, an account of the expenditures in detail. This "statement of expenditures" has been received and is included in the report.

Since 1889, when the Legislature transferred to the School Committee the responsibility of repairing school-houses, all expenditures incurred for the running expenses of the schools come under the direction of the School Committee.

Under date of Dec. 27, 1892, this committee presented to the Board the amount that, in their judgment, would be required to carry on the schools for the financial year 1893–94, exclusive of new school-houses. The estimates submitted, after receiving the approval of the School Board, were forwarded to His Honor the Mayor. The amount requested for ordinary expenses was subdivided as follows:

Salaries of instructors	$1,462,700 00
Salaries of officers	61,220 00
Salaries of janitors	115,000 00
Fuel, gas, and water	82,500 00
Supplies and incidentals	107,900 00
School-houses, repairs, etc.	261,000 00
Total ordinary expenses	$2,090,320 00

The City Council granted two appropriations for the running expenses of the schools, one of $1,804,000, under the head of "School Committee," and the other $190,000, under the head of "Public Buildings, Schools," making a total of $1,994,000, a reduction of $96,320 from the amount requested by the School Committee. Of this reduction $71,000 were taken from the appropriation requested for repairs, etc., of school-houses. The total amount granted was less by $6,000 than that allowed for the year previous, although the number of pupils in the schools is increasing at the rate of two to three per cent. each year. This fact alone ought to indicate that an increased rather than a diminished appropriation should be allowed.

During the year the committees of the School Board having charge of the expenditures were constantly reminded of the insufficiency of the appropriation, and in many important directions expenses were curtailed on that account.

Towards the end of the year it became evident that the appropriation remaining would not be sufficient to continue the schools, excepting by abridging the term of some of the schools, or by adopting other measures equally radical, which the School Board were reluctant to undertake.

Under date of Nov. 14, 1893, a communication was addressed to His Honor the Mayor, by the School Board, requesting an additional appropriation of $15,000, to which the following reply was received:

CITY OF BOSTON, OFFICE OF THE MAYOR,
CITY HALL, Nov. 21, 1893.

FRED. G. PETTIGROVE, Esq., *President School Committee:*

DEAR SIR: In reply to the communication of the School Committee dated November 14 requesting a transfer, I have to say that it ought to be known to your committee that the City Council is limited by law in the amount which it can appropriate for current expenses of the City Government, including those of the School Committee, and that the total estimated income of the city is appropriated at the beginning of the fiscal year. There is no source of revenue from which the City Council can draw at this period of the year to increase any department's

appropriation; but the general appropriation order provides that during the last two months of the fiscal year transfers can be made from department balances, if any there be which indicate a surplus towards the close of the year. I have no doubt that after the first of December it will be possible to provide in this manner the additional appropriation which your committee desire.

Yours very truly,

N. MATTHEWS, JR.

The running expenses of the schools exceeded the appropriation and credits by $15,254.11, which amount was transferred from other accounts by His Honor the Mayor and the City Auditor, thus satisfactorily providing for the deficiency at the end of the financial year 1893–94.

The ordinary expenses for the past year were as follows:

Salaries of instructors		$1,470,051 03
Salaries of officers		62,023 34
Salaries of janitors		114,512 85
Fuel, gas, and water		86,666 99
Supplies and incidentals:		
Books	$29,026 17	
Printing	7,070 16	
Stationery and drawing materials	13,293 06	
Miscellaneous items	38,501 58	
		87,890 97
School-house repairs, etc.		190,465 06
Expended from the appropriation		$2,011,610 24
Expended from income of Gibson fund		907 08
Total expenditure		$2,012,517 32
Total income		40,709 13
[1]Net expenditure, School Committee		$1,971,808 19

Your committee, in preparing the estimates, stated that the probable income would be as follows:

[1]The City Council voted to place a flag-staff on the Shurtleff School, South Boston. The City Auditor charged the expense, $100, to the running expenses of the schools, thus increasing this charge to $1,971,908.19.

Non-residents, State and City . . .	$16,000 00
Trust-funds and other sources . . .	26,000 00
Total estimated income . . .	$42,000 00

The income collected was as follows:

Non-residents, State and City . . .	$17,381 15
Trust-funds and other sources . . .	20,768 75
Sale of books	203 10
State of Massachusetts, travelling expenses,	2,356 13
Total income	$40,709 13

The net expenses of the School Committee, compared with those for 1892–93, show an increase of $18,760.68.

The average number of pupils belonging to the different grades the past year was 71,495. The average cost per pupil amounted to $27.58, a decrease, as compared with that of the previous year, of seventy-four cents per pupil.

The increase in the average number of pupils the past year was 2,525, the largest increase in any one year since 1875–76, which indicates that the number of children attending the schools is keeping pace with the increasing population of our city.

The gross expenses for the past year, compared with those for 1892–93, show a variation in the different items of the appropriation as follows:

Salaries of instructors, increased . .		$45,206 74
Salaries of officers, increased . . .		1,456 51
Salaries of janitors, increased . . .		3,843 02
Fuel, gas, and water, increased . . .		8,794 24
		$59,300 51
Supplies and incidentals, decreased	$4,955 95	
School-houses, repairs, etc., decreased	31,340 47	
		36,296 42
Total increase, gross		$23,004 09

The following shows the variation in the number of pupils and the increase in salaries in the different grades for the past year, compared with those for 1892–93:

High Schools, pupils increased 230, salaries increased	$13,866 72
Grammar Schools, pupils increased 801, salaries increased,	7,792 69
Primary Schools, pupils increased 706, salaries increased,	9,283 57
Horace Mann School, pupils decreased 1, salaries inc'd	1,107 47
Kindergartens, pupils increased 174, salaries increased	4,826 99
Evening Schools, pupils increased 627, salaries increased	3,886 50
Evening Drawing Schools, pupils decreased 11, salaries increased	741 00
Manual Training Schools, salaries increased	2,415 79
Special Teachers, salaries increased	1,286 01
Spectacle Island, pupils decreased 1	
Total increase in pupils, 2,525, in salaries	$45,206 74

The expenses of the Mechanic Arts High School, which opened early in September, have been charged under the head of High Schools, as the academic branch of the school will probably be more expensive than the manual training department.

The number of regular instructors on the pay-rolls, Jan. 1, 1894, was 1,436, divided among the several grades of schools as follows: High Schools, 130; Grammar Schools, 700; Primary Schools, 493; Horace Mann School, 12; Kindergartens, 81; Manual Training, including Cookery, 20, —an increase of 35 regular instructors since Jan. 1, 1893.

In addition, there have been 126 temporary teachers and 54 special assistants employed in the day schools, an average of 198 instructors in the Evening and Evening Drawing Schools, and 58 special instructors, making a total of 1,872 instructors on the pay-rolls during the year.

Later in this report the expenses of each grade of schools are given, but include only such as are directly chargeable to the different grades. In addition, certain expenditures, which might be termed general expenses, such as cost of supervision, salaries of officers and directors of special studies, printing, the annual festival, and similar expendi-

tures, amounting to $129,877.09, or about six per cent. of the running expenses, are incurred for the schools as a whole.

In like manner a certain part of the income collected, amounting to $20,768.75, is received for the schools in general, and not for any particular grade.

The following shows the total net cost for carrying on each grade of schools, by charging and crediting each with its share *pro rata* of the general expenses and income:

NORMAL, LATIN, AND HIGH SCHOOLS.

Salaries of instructors		$241,171 81
Salaries of janitors		13,452 42
Books, drawing materials, and stationery		8,327 88
Other supplies and miscellaneous items		2,138 45
Fuel, gas, and water		12,234 85
Furniture, repairs, etc.		20,088 81
Proportion of general expenses		20,775 95
Total cost		$318,190 17
Income from sale of books	$65 90	
Proportion of general income	3,322 30	
		3,388 20
Net cost		$314,801 97

Average number of pupils, 3,892; cost per pupil, $80.88.

Cost of educating 3,892 pupils	$314,801 97
Tuition paid by 97 non-resident pupils	7,246 62
Net cost of educating 3,795 resident pupils	$307,555 35

Average cost of each resident pupil, $81.04.

GRAMMAR SCHOOLS.

Salaries of instructors		$723,299 44
Salaries of janitors		52,450 62
Books, drawing materials, and stationery		26,842 89
Other supplies and miscellaneous items		4,349 33
Fuel, gas, and water		38,534 90
Furniture, repairs, etc.		80,545 75
Proportion of general expenses		64,687 59
Total cost		$990,710 52
Income from sale of books	$73 17	
Income from non-resident tuition	245 10	
Proportion of general income	10,344 24	
		10,662 51
Net cost		$980,048 01

Average number of pupils, 32,700; average cost per pupil, $29.97.

PRIMARY SCHOOLS.

Salaries of instructors		$348,686 34
Salaries of janitors		43,215 87
Books, drawing materials, and stationery		6,082 34
Other supplies and miscellaneous items		3,294 31
Fuel, gas, and water		28,611 21
Furniture, repairs, etc.		69,212 20
Proportion of general expenses		34,864 93
Total cost		$533,967 20
Income from sale of books	$46 06	
Income from non-resident tuition	20 81	
Proportion of general income	5,575 28	
		5,642 15
Net cost		$528,325 05

Average number of pupils, 26,141; cost per pupil, $20.21.

EVENING HIGH AND ELEMENTARY SCHOOLS.

Salaries of instructors		$44,233 50
Salaries of janitors		2,173 94
Books, drawing materials, and stationery		1,688 03
Other supplies and miscellaneous items		31 51
Fuel, gas, and water		3,812 91
Furniture, repairs, etc.		1,026 14
Proportion of general expenses		3,699 96
Total cost		$56,665 99
Income from sale of books	$17 97	
Proportion of general income	591 66	
		609 63
Net cost		$56,056 36

Average number of pupils, 5,607; average cost per pupil, $10.

EVENING DRAWING SCHOOLS.

Salaries of instructors		$11,130 00
Salaries of janitors		349 00
Drawing materials and stationery		633 26
Other supplies and miscellaneous items		13 79
Fuel, gas, and water		625 20
Furniture, repairs, etc.		1,022 95
Proportion of general expenses		962 20
Total cost		$14,736 40
Proportion of general income		153 87
Net cost		$14,582 53

Average number of pupils, 632; average cost per pupil, $23.07.

HORACE MANN SCHOOL.

Salaries of instructors	$12,030 14
Salaries of janitors	960 00
Books, drawing materials, and stationery	96 42
Other supplies, car-fares, and miscellaneous items	1,892 73
Fuel, gas, and water	609 27
Furniture, repairs, etc.	906 82
Proportion of general expenses	1,152 29
Total cost	$17,647 67
Proportion of general income	184 26
	$17,463 41

Average number of pupils, 96; cost per pupil, $181.91.

Total cost of educating 96 pupils	$17,463 41
Received from the State, etc., for tuition and travelling expenses of pupils	12,224 75
Net cost of educating 96 pupils	$5,238 66

Net average cost of each pupil, $54.57.

KINDERGARTENS.

Salaries of instructors	$46,808 89
Salaries of janitors	1,371 00
Books, drawing materials, and stationery	24 39
Kindergarten supplies	1,100 24
Piano and stool	176 50
Services of maids	935 85
Other supplies and miscellaneous items	36 20
Fuel, gas, and water	639 53
Furniture, repairs, etc.	2,363 29
Proportion of general expenses	3,734 17
Total cost	$57,190 06
Proportion of general income	597 14
Net cost	$56,592 92

Average number of pupils, 2,411; average cost per pupil, $23.47.

MANUAL TRAINING SCHOOLS.

Salaries of instructors	$15,684 90
Salaries of janitors	540 00
Books, drawing materials, and stationery	58 10
Lumber and hardware	2,465 90
Crockery, groceries, and kitchen materials	1,116 01
Other supplies, models, and miscellaneous items	1,094 06
Fuel, gas, and water	1,029 32
Furniture, repairs, etc.	3,562 89
Total cost	$25,551 18

The pupils attending the Manual Training Schools are included in the number belonging to the other grades of schools.

The entire expenditures of the School Committee may be classified under four heads:

First. Salaries of instructors and officers, fixed by the School Committee. The pay-rolls when made out in accordance with the action of the Board are approved by this committee.

Second. Salaries of janitors fixed, under the Rules of the School Board, by the Committee on Accounts, who approve the pay-rolls when prepared in conformity with their action.

Third. Fuel, gas, and water, and supplies and incidentals. According to the Rules, these items come under the direction of the Committee on Supplies, who make the contracts and purchase all materials required by the schools. The bills under these heads are approved by the Committee on Supplies, and then forwarded to this committee.

Fourth. Repairs and alterations of school-houses. The expenditures for these purposes are incurred under the direction of the Committee on School Houses, who approve the bills and transmit them to this committee.

The pay-rolls prepared by the Auditing Clerk, and the bills received from the Committees on Supplies and School Houses, after approval by the Committee on Accounts, are forwarded to the City Auditor, who audits them and issues his warrant for payment by the City Treasurer.

The amount paid for salaries of instructors the past year was $1,470,051.03, an increase over that of the year preceding of $45,206.74, — the largest increase in any year, with one exception, since the reorganization of the Board. The average yearly increase for the past ten years has been about $35,000.

Section 117 of the Rules of the School Board, adopted at the beginning of the year, by which the Committee on Nominations are required to allow certain credits for previous

service in nominating teachers, is largely responsible for the difference between the average yearly increase and the actual increase for the year just closed.

According to the minutes of the School Board for 1892, the number of teachers nominated on probation was 121. Of this number, 29 when nominated were placed on advanced years of service with salaries above the minimum; and the difference between their compensation for the first year's service and what it would have been had they been nominated on the first year's salary was $4,524. In 1893 the number of teachers nominated was 155. Of this number, 105 when nominated were placed on advanced years of service in accordance with the provisions of Section 117, and the difference between their compensation for the first year of service and what it would have been on the minimum salary was $15,780.

The increase in the cost of salaries of instructors for the first year's service occasioned by teachers thus receiving credit for previous service will show a difference between 1892 and 1893 of $11,256, and the additional increase year by year, until teachers nominated under these conditions reach the maximum salary of their grade, based upon the experience of this first year's operation of the new regulation, will add considerably to the cost for salaries of instructors.

Nearly one-half of the increase in salaries of instructors occurred in the High Schools, where an advance of about seven per cent. in pupils is recorded, in Kindergartens, and in Manual Training, which two branches of study are gradually being introduced throughout the city, so that all sections may receive the benefit from them.

During the year $59,189.29 were paid for instruction by special teachers, as follows:

Sewing, 31 teachers, 271 divisions	$18,775 28
Music, 9 instructors	14,297 68
Drawing: director	3,000 00
assistant	1,800 00
Modern languages: director	3,000 00
two assistants	3,000 00
Physical training: director	3,000 00
assistant	2,000 00
Military drill: 1 instructor and armorer	2,908 33
Kindergarten methods, 2 instructors	1,960 83
Calisthenics and elocution, 2 instructors	1,800 00
Chemistry: 1 instructor	1,620 00
assistant	804 00
assistant	674 28
Service on Spectacle Island	548 89
Total for special instructors	$59,189 29

The amount paid for salaries of officers the past year was $62,023.34, an increase of $1,456.51 as compared with the year preceding.

The appointment of two truant officers in place of Messrs. Swett and Felch, granted leave of absence on full pay from April 15, 1893, to Sept. 1, 1893, was largely responsible for this increase.

The amount paid for salaries of janitors the past year was $114,512.85, an increase of $3,843.02 over the cost for the previous year. This difference was occasioned largely by the additional school buildings acquired. The number of buildings used for school purposes was 180, requiring a force of 1 engineer and 160 janitors, many of whom have served the city faithfully for many years. The average salary paid to each janitor was $711.26; but as many janitors employ temporary assistance and some others permanent assistance, the net average amount received by each janitor is much less than the sum above noted.

The average cost for the care of each High School building during the year was $1,494.71, for each Grammar School building $904.32, and for each Primary School building $382.44.

The modern methods of heating and ventilation brought into use during the past ten years demand a higher grade of service than was formerly the case; and this fact, together with the additional work required in caring for the new school buildings lately acquired, adds considerably to the cost for salaries for janitors.

The duties of a janitor, especially in one of the large modern-built school-houses, are quite responsible, calling for good judgment, hard work, and constant watchfulness.

In the appointment of janitors to fill vacancies where the salary of the position is over $300 per annum, this committee is restricted to the transfer of janitors already in the service, or to the selection of candidates from names certified by the Civil Service Commission.

Feb. 14, 1893, an order was offered in the School Board and passed under a suspension of the rules, requiring the floors of the school-rooms to be washed at least once in two months. At a subsequent meeting, held Feb. 28, 1893, this action was reconsidered, and the order referred to the Committee on Accounts.

This committee considered the matter as most important, as the adoption of the order would require considerable additional labor in the school buildings with a corresponding large annual expenditure, and also for the reason that many persons believed it to be a necessity for the health and comfort of the pupils.

A hearing was given, at which the member of the Board who offered the order and the Director of Physical Culture presented their reasons for being strongly in favor of having the floors washed. Among the dozen principals of schools present there was a diversity of opinion, some favoring it, others having grave doubts about it proving a benefit, while many were opposed to it.

The Superintendent of Public Buildings stated that, in his opinion, the general washing of floors would contribute neither to the cleanliness nor healthfulness of the rooms. He stated, as the result of his experience, that it would injure

the floors, causing the boards to expand and contract, making cracks and slivers; and that floors where the boards have shrunk and the cracks are filled with dirt, would emit an unpleasant odor for several days until they were thoroughly dried.

From the information gained this committee decided that no general rule could be applied with advantage, the conditions varying so widely in different parts of the city. From estimates made it would cost from $10,000 to $12,000 annually to wash all the floors in the school buildings five times each year. Your committee are reluctant to propose this addition to the annual cost of the schools, while the City Council are apparently unwilling to grant an appropriation sufficient to meet the expenses that now exist, and especially for a purpose about which there is so diverse an opinion.

Bills were received from the Committee on Supplies during the year and approved by this committee to the amount of $174,557.96, — $87,890.97 for supplies and incidentals, and $86,666.99 for fuel, gas, and water. The income from the sale of books, and that refunded by the State of Massachusetts on account of travelling expenses of pupils in the Horace Mann School, amounted to $2,559.23, which being deducted leaves $171,998.73 as the net amount expended. This shows an increase of $8,794.24 for fuel, gas, and water, and a decrease of $5,844.78 for supplies and incidentals, a net increase of $2,949.46. The schools used 13,322 tons of coal and 202 cords of wood, an increased consumption of nearly eight per cent. over any previous year.

The cost the past year for fuel, gas, and water averaged $1.21 per pupil.

During the year bills to the amount of $190,465.06 for repairs and alterations of school-houses were received, properly certified by the Superintendent of Public Buildings and approved by the Committee on School Houses. The average annual expense for this work for the six previous years has been about *$240,000.* The School Committee are limited in

their expenditures for repairs to the appropriation granted by the City Council and cannot be held responsible, should an unsatisfactory condition of the school-houses exist, in case the estimated amount requested is reduced, and that allowed proves insufficient to meet necessary demands.

The following table shows the expenditures made for carrying on the schools, exclusive of furniture, repairs, and new school-houses since the reorganization of the Board, a period of seventeen years and nine months:

Year.	Expenditures.	Income.	Net Expenditures.	No. of Pupils.	Rate per Pupil.
1876-77 . .	$1,525,199 73	$21,999 03	$1,503,200 70	50,308	$29 88
1877-78 . .	1,455,687 74	30,109 31	1,425,578 43	51,759	27 54
1878-79 . .	1,405,647 60	32,145 54	1,373,502 06	53,262	25 79
1879-80 . .	1,416,852 00	49,090 28	1,367,761 72	53,981	25 34
1880-81 . .	1,413,763 96	73,871 08	1,339,892 88	54,712	24 49
1881-82 . .	1,392,970 19	69,344 08	1,323,626 11	55,638	23 79
1882-83 . .	1,413,811 66	73,278 56	1,340,533 10	57,554	23 29
1883-84 . .	1,452,854 38	79,064 66	1,373,789 72	58,788	23 37
1884-85 . .	1,507,394 03	39,048 26	1,468,345 77	59,706	24 59
1885-86 . .	1,485,237 20	31,213 34	1,454,023 86	61,259	23 74
1886-87 . .	1,485,343 29	33,388 28	1,451,955 01	62,259	23 32
1887-88 . .	1,536,552 99	37,092 81	1,499,460 18	62,226	24 10
1888-89 . .	1,596,949 08	39,585 52	1,557,363 56	64,584	24 11
1889-90 . .	1,654,527 21	39,912 30	1,614,614 91	66,003	24 46
1890-91 . .	1,685,360 28	41,209 06	1,644,151 22	67,022	24 53
1891-92 nine months	1,295,981 34	30,757 31	1,265,224 03	67,696	18 69
1892-93 . .	1,768,985 64	37,578 66	1,731,406 98	68,970	25 10
1893-94 . .	1,822,052 26	40,709 13	1,781,343 13	71,495	24 92

From the above table it will be seen that the running expenses, exclusive of repairs, the past year were eighteen cents less per pupil than for the previous year.

The following table shows the cost of repairs made and furniture provided since 1876–77:

Year.	Expenditures.	Income.	Net Expenditures.	No. of Pupils.	Rate per Pupil.
1876-77 . .	$165,876 72	. . . . .	$165,876 72	50,308	$3 30
1877-78 .	126,428 35	. . . . .	126,428 35	51,759	2 45
1878-79 . .	114,015 32	. . . . .	114,015 32	53,262	2 14
1879-80 . .	98,514 84	. . . . .	98,514 84	53,981	1 82
1880-81 . .	145,913 55	$205 00	145,708 55	54,712	2 66
1881-82 . .	178,008 88	247 50	177,761 38	55,638	3 19
1882-83 . .	189,350 83	231 00	189,119 83	57,554	3 29
1883-84 . .	186,852 18	300 00	186,552 18	58,788	3 17
1884-85 . .	198,059 11	526 50	197,532 61	59,706	3 31
1885-86 . .	188,435 63	137 50	188,298 13	61,259	3 07
1886-87 . .	171,032 71	295 92	170,733 79	62,259	2 74
1887-88 . .	243,107 89	221 00	242,886 89	62,226	3 90
1888-89 . .	251,736 17	153 00	251,583 17	64,584	3 90
1889-90 . .	262,208 75	850 20	261,358 55	66,003	3 96
1890-91 . .	263,860 16	208 00	263,652 16	67,022	3 94
1891-92 nine months	205,344 27	595 50	204,748 77	67,696	3 02
1892-93 . .	221,905 53	165 00	221,740 53	68,970	3 22
1893-94 . .	190,465 06	. . . . .	190,465 06	71,495	2 66

The expenditures for repairs, etc., were cut down from $3.22 per pupil in 1892–93 to $2.66 per pupil last year, a reduction of fifty-six cents.

The foregoing tables include all the running expenses of the schools, and form the basis for computing the rate per pupil. The total running expenses, compared with those of 1892–93, show a decrease in the rate per pupil of seventy-four cents.

The number of non-resident pupils returned by the principals as attending the schools was 130. Of this number 106 paid tuition, and the balance either left school or were excused from payment by the Committee on Accounts. More than eighty per cent. of the non-residents attend the Normal, Latin, and High Schools.

The income received from this source was $7,512.53. In addition the State of Massachusetts paid $9,868.62 for the

tuition of pupils attending the Horace Mann School, making a total of $17,381.15 received by the city for tuition of pupils.

Additional Kindergartens have been established throughout the year in the Wells, Dwight, Hugh O'Brien, and Robert G. Shaw Districts.

There are forty-seven Kindergartens at the present time, employing eighty-one instructors and four special assistants.

The salaries paid instructors the past year amounted to $46,808.89, an increase over the preceding year of $4,826.99.

No change occurred in the number or location of the Evening Schools and Evening Drawing Schools throughout the year. The salaries paid instructors in the Evening High and Evening Elementary Schools amounted to $44,233.50, an increase of $3,886.50 as compared with the cost for the year previous; the salaries paid instructors in the Evening Drawing Schools amounted to $11,130, an increase of $741 as compared with the cost for the year previous, making an increase in the cost for Evening School instruction of $4.627.50.

The total expenditure for the public schools, including new school-houses, for the past year was as follows:

School Committee		$1,821,145 18
School Committee, Gibson Fund		907 08
School Committee, repairs, etc.		190,465 06
City Council, flag-staff		100 00
Public Buildings and City Architect Departments, new school-houses (special)		279,356 81
Total gross expenditure		$2,291,974 13
Income for the year was as follows:		
School Committee	$40,709 13	
Sale of old school buildings	10,300 00	
		51,009 13
Total net expenditure		$2,240,965 00

Your committee have added to this report the estimates for the financial year 1894–95, as prepared, approved, and

presented to His Honor the Mayor, under date of Dec. 26, 1893. The amount requested, for ordinary expenses, was as follows:

Salaries of instructors	$1,529,440 00
Salaries of officers	61,260 00
Salaries of janitors	118,500 00
Fuel, gas, and water	88,000 00
Supplies and incidentals	115,800 00
School-houses, repairs, etc.	279,000 00
Total ordinary expenses	$2,192,000 00

In addition, a special appropriation of $90,000 was requested for extraordinary repairs, in the nature of ventilation and other sanitary improvements of school-houses, making the total amount of the estimates $2,282,000.

The City Council granted the School Committee for expenses, exclusive of repairs, $1,840,000, a reduction of $73,000 from the estimates.

The amount allowed is only $18,854.82 more than the actual expenditures for the year just closed, and will not be sufficient to carry on the schools as they are at present constituted. The increase each year for the past three years, in salaries of instructors alone, has been about $40,000, or more than double the additional amount granted.

The appropriation granted under the head of Public Buildings, Schools, was $190,000, about two-thirds of that requested. The citizens of Boston have the right to expect good, clean, and wholesome accommodations for their children, and if the City Council will not provide sufficient money for this purpose, the School Board cannot be held accountable for the result.

BENJAMIN B. WHITTEMORE,
Chairman.
WILLARD S. ALLEN,
J. P. C. WINSHIP,
EDWARD H. DUNN,
FRED. G. PETTIGROVE,
Committee on Accounts.

CALENDAR FOR FINANCIAL YEAR 1894-95.

FEBRUARY.

Su	Mo	Tu	We	Th	Fr	Sa
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	..	..	..
..	..	..	..	..	..	..

MARCH.

Su	Mo	Tu	We	Th	Fr	Sa
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
..	..	..	..	..	..	..

APRIL.

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	..	..	..	..	..
..	..	..	..	..	..	..

MAY.

Su	Mo	Tu	We	Th	Fr	Sa
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	..	..
..	..	..	..	..	..	..

JUNE.

Su	Mo	Tu	We	Th	Fr	Sa
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
..	..	..	..	..	..	..

JULY.

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	..	..	..	..
..	..	..	..	..	..	..

AUGUST.

Su	Mo	Tu	We	Th	Fr	Sa
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	..
..	..	..	..	..	..	..

SEPTEMBER.

Su	Mo	Tu	We	Th	Fr	Sa
	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	..	..	..	..	..	..

OCTOBER.

Su	Mo	Tu	We	Th	Fr	Sa
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	..	..	..
..	..	..	..	..	..	..

NOVEMBER.

Su	Mo	Tu	We	Th	Fr	Sa
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	..
..	..	..	..	..	..	..

DECEMBER.

Su	Mo	Tu	We	Th	Fr	Sa
..	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	..	..	..	..	..

JANUARY.

Su	Mo	Tu	We	Th	Fr	Sa
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	..	..
..	..	..	..	..	..	..

Figures in black indicate days on which schools are in session; in red, days on which they are closed.

Besides these, Thanksgiving, the half-day preceding, and the Friday following, and Fast Day, are holidays.

The regular meetings of the School Committee are on the evenings of the second and fourth Tuesdays in each month, except July and August.

PAY-DAYS FOR THE TEACHERS OF THE PUBLIC SCHOOLS BY THE CITY TREASURER.

Payments are made at the school-houses on the following *working days* of the schools each month, according to the time the rolls are received by the Treasurer:

Last or first Monday: Bowdoin, Phillips, and Wells.

Last or first Tuesday: Eliot and Hancock.

Last or first Wednesday: Dorchester High, East Boston High, Adams, Chapman, Emerson, Harris, Lyman, Minot, and Stoughton.

Last or first Thursday: Normal, Latin, English High, Mechanic Arts High, Brimmer, Edward Everett, Gibson, Harvard, Henry L. Pierce, Hugh O'Brien, Mather, Prince, Rice, Tileston, Winthrop, and Horace Mann.

Last or first Friday: Girls' Latin, Charlestown High, Girls' High, Bigelow, Bunker Hill, Dwight, Everett, Franklin, Frothingham, Gaston, John A. Andrew, Lawrence, Lincoln, Norcross, Prescott, Quincy, Shurtleff, Thomas N. Hart, and Warren.

First Monday after the 27th: Roxbury High, Dearborn, Dillaway, Dudley, Hyde, and Sherwin.

First Tuesday after the 27th: Charles Sumner and Robert G. Shaw.

First Wednesday after the 27th: Brighton High, Washington Allston, and Bennett.

First Thursday after the 27th: Comins, Lowell, and Martin.

First Friday after the 27th: West Roxbury High, Agassiz, Bowditch, George Putnam and Lewis.

The schools in East Boston, Charlestown, North and West Ends are paid by Mr. Gibson; the remainder of the schools in the city proper by Mr. Carty; those in Roxbury, excepting the Hugh O'Brien, West Roxbury, and Brighton by Mr. Gibbons; and those in South Boston and Dorchester and the Hugh O'Brien by Mr. Vaughn.

Janitors are paid on the same days as the teachers.

If, for any reason, the schools should be closed on the above-named days, the teachers will be paid as soon after as possible.

Teachers not paid on the regular days will be paid at the Treasurer's office, between 9 A.M. and 2 P.M., any day after the paymaster has visited the school.

Teachers should collect their salaries in person, except in cases of sickness, when orders addressed to the City Treasurer will be received.

Evening School teachers and Special Instructors will be paid on the last secular day but one of each month, between 9 A.M. and 2 P.M., at the City Treasurer's office, City Hall.

SCHOOL EXPENDITURES.

ANNUAL EXPENDITURES for the Public Schools of Boston for the last thirty financial years; also the average number of scholars. Annexations occurred as follows: Roxbury, Jan. 6, 1868; Dorchester, Jan. 3, 1870; Charlestown, Brighton, and West Roxbury, Jan. 5, 1874.

FINANCIAL YEAR.	No. of Day Scholars Belonging	No. of Evening Scholars Belonging	Total No. of Scholars Belonging	Salaries of Teachers and Officers, School Committee.	Incidental Expenses.	Total for Running Expenses.	Ordinary Revenue.	Net Running Expenses.	Net Rate per Scholar.	Cost of new School-houses.	Total Expenditures.
1864–65 . . .	27,095	. . .	27,095	$380,833 06	$172,331 78	$553,164 84	$7,927 56	$545,237 28	$20 12	$90,609 84	$643,774 68
1865–66 . . .	27,204	. . .	27,204	412,550 82	163,270 76	575,821 58	8,574 22	567,247 36	20 85	200,553 64	776,375 22
1866–67 . . .	28,002	. . .	28,002	503,596 66	176,108 85	679,705 51	5,858 93	673,846 58	24 06	101,575 09	781,280 60
1867–68 . . .	27,982	. . .	27,982	561,169 98	211,536 43	772,706 41	10,467 05	762,239 36	27 24	188,790 80	961,497 21
1868–69 . . .	33,994	. . .	33,994	738,198 37	244,478 63	982,677 00	8,876 68	973,800 32	28 64	346,610 78	1,329,287 78
1869–70 . . .	35,442	. . .	35,442	739,345 65	248,066 95	987,412 60	14,661 16	972,751 44	27 45	612,337 86	1,599,750 46
1870–71 . . .	36,758	. . .	36,758	838,366 77	293,232 59	1,131,599 36	23,806 35	1,107,793 01	30 14	443,679 71	1,575,279 07
1871–72 . . .	36,650	5,128	41,778	886,940 47	329,639 18	1,216,579 65	26,899 98	1,189,679 67	28 47	97,800 68	1,314,380 33
1872–73 . . .	35,624	2,121	37,745	953,502 06	338,970 85	1,292,472 91	28,113 93	1,264,358 98	33 50	454,230 34	1,746,703 25
1873–74 . . .	41,544	1,714	43,258	1,041,375 52	377,681 52	1,419,057 04	28,848 73	1,390,208 31	32 14	446,663 25	1,865,720 29
1874–75 . . .	44,942	1,522	46,464	1,249,498 93	474,874 68	1,724,373 61	20,220 82	1,698,152 79	36 54	356,669 74	2,081,043 35
1875–76 . . .	45,924	3,393	49,317	1,266,803 59	470,830 68	1,737,634 27	20,635 72	1,716,998 55	34 82	277,746 57	2,015,380 84
1876–77 . . .	46,581	3,727	50,308	1,268,604 23	422,472 22	1,691,076 45	21,999 03	1,669,077 42	33 18	125,539 04	1,816,615 49
1877–78 . . .	47,675	4,084	51,759	1,215,782 03	366,334 06	1,582,116 09	30,109 31	1,552,006 78	29 99	174,324 75	1,756,440 84
1878–79 . . .	49,700	3,562	53,262	1,172,489 69	347,173 23	1,519,662 92	32,145 54	1,487,517 38	27 93	240,222 98	1,759,885 90
1879–80 . . .	50,851	3,130	53,981	1,162,258 61	353,108 23	1,515,366 84	49,090 28	1,466,276 56	27 16	136,878 45	1,652,245 29
1880–81 . . .	51,542	3,170	54,712	1,165,402 69	394,274 82	1,559,677 51	74,076 08	1,485,601 43	27 15	215,359 64	1,775,037 15
1881–82 . . .	52,611	3,027	55,638	1,165,629 71	405,349 36	1,570,979 07	69,591 58	1,501,387 49	26 98	139,126 88	1,710,105 95
1882–83 . . .	54,590	2,964	57,554	1,180,193 73	422,968 76	1,603,162 49	73,509 56	1,529,652 93	26 58	77,028 73	1,680,791 22
1883–84 . . .	55,640	3,148	58,788	1,206,683 23	433,023 33	1,639,706 56	79,364 66	1,560,341 90	26 54	268,879 72	1,908,586 28
1884–85 . . .	55,888	3,818	59,706	1,230,771 71	474,681 43	1,705,453 14	39,574 76	1,665,878 38	27 90	278,114 05	1,983,567 19
1885–86 . . .	57,180	4,079	61,259	1,251,403 29	422,269 54	1,673,672 83	31,350 84	1,642,321 99	26 81	362,796 15	2,036,468 98
1886–87 . . .	58,266	3,993	62,259	1,269,545 91	386,830 09	1,656,376 00	33,684 20	1,622,691 80	26 06	125,687 45	1,782,063 45
1887–88 . . .	58,310	3,916	62,226	1,296,192 42	483,468 46	1,779,660 88	37,313 81	1,742,347 07	28 00	127,875 90	1,907,536 78
1888–89 . . .	60,224	4,360	64,584	1,322,506 17	516,179 08	1,848,685 25	39,738 52	1,808,946 73	28 01	121,328 95	1,970,014 20
1889–90 . . .	60,478	5,525	66,003	1,390,868 87	525,867 09	1,916,735 96	40,762 50	1,875,973 46	28 42	349,602 82	2,266,338 78
1890–91 . . .	61,019	6,003	67,022	1,424,988 20	524,232 24	1,949,220 44	41,417 06	1,907,803 38	28 47	172,523 90	2,121,744 34
For the nine months ending January 31, 1892 . .	61,763	5,933	67,696	1,079,848 59	421,477 02	1,501,325 61	31,352 81	1,469,972 80	21 71	527,429 10	2,028,754 71
1892–93 . . .	63,347	5,623	68,970	1,485,411 12	505,480 05	1,990,891 17	37,743 66	1,953,147 51	28 32	569,700 75	2,560,591 92
1893–94 . . .	65,256	6,239	71,495	1,532,074 37	480,542 95	2,012,617 32	40,709 13	1,971,908 19	27 58	279,356 81	2,291,974 18

SALARIES OF OFFICERS AND TEACHERS OF THE PUBLIC SCHOOLS, 1894.

Superintendent	$4,200 00
Supervisors (each)	3,780 00
Secretary	2,880 00
Auditing Clerk	2,880 00

Normal School.

Head-Master	$3,780 00
Sub-Masters, first year, $2,196; annual increase, $60; maximum	2,496 00
First Assistants, first year, $1,440; annual increase, $36; maximum	1,620 00
Second Assistants, first year, $1,140; annual increase, $48; maximum	1,380 00

High Schools.

Head-Masters	$3,780 00
Masters	2,880 00
Junior-Masters, first year, $1,008; annual increase (for thirteen years), $144; salary for the fourteenth and subsequent years, with the rank of Master	2,880 00
Assistant Principal	1,800 00
[1] First Assistant	1,620 00
Assistants, first year, $756; annual increase, $48; maximum	1,380 00

Mechanic Arts High School.

Head-Master	$3,780 00
Masters	2,880 00

[1] It has been voted to abolish this grade when the present incumbent retires from service.

Junior-Masters, first year, $1,008; annual increase (for thirteen years), $144; salary for the fourteenth and subsequent years, with the rank of Master	$2,880 00
Instructors, first year, $1,500; annual increase, $60; maximum	2,280 00
Assistant Instructors, first year, $756; annual increase, $48; maximum	1,380 00

Grammar Schools.

Masters, first year, $2,580; annual increase, $60; maximum	$2,880 00
Sub-Masters, first year, $1,500; annual increase, $60; maximum	2,280 00
First Assistants, first year, $900; annual increase, $36; maximum	1,080 00
Second Assistants, first year, $756; annual increase, $12; maximum	816 00
Third Assistants, first year, $456; annual increase, $48; maximum	744 00

Primary Schools.

Second Assistants, first year, $756; annual increase, $12; maximum	$816 00
Fourth Assistants, first year, $456; annual increase, $48; maximum	744 00

Kindergartens.

Principals, first year, $600; annual increase, $36; maximum	$708 00
Assistants, first year, $432; annual increase, $36; maximum	540 00

Special Instructors.

Special Instructors of Music	$2,640 00
Assistant Instructors in Music	852 00
Director of Drawing	3,000 00
[1]Assistant to Director of Drawing	1,800 00
Teacher of Chemistry, Girls' High School	1,620 00
Laboratory Assistant, Girls' High School	804 00
Laboratory Assistant, Roxbury High School	804 00
Teacher of Physical Culture and Elocution, Girls' High School	1,200 00
Teacher of Physical Culture, Girls' Latin School,	600 00
Teacher of theory and practice of the Kindergarten, Normal School (Miss Laura Fisher)	2,400 00
[2]Assistant teacher of the theory and practice of the Kindergarten, Normal School (same salary as that of a Second Assistant, Normal School).	
Director of French and German	3,000 00
Assistants	1,500 00
Director of Physical Training	3,000 00
Assistant	2,000 00
Special teacher in Modern Languages in the Brighton and East Boston High Schools	360 00
Horace Mann School for the Deaf:	
Principal	2,508 00
Assistant Principal, first year, $1,068; annual increase, $60; maximum	1,308 00
Assistants, first year, $588; annual increase, $60; maximum	1,008 00
Principal of Manual Training Schools	2,004 00
Instructors in Manual Training Schools	1,620 00
Instructors in Manual Training Schools	1,200 00

[1]To give instruction in drawing in the Normal School and to assist the Director of Drawing.

[2]To serve also as principal of Training School Kindergarten.

Instructor in Manual Training (Horace Mann School)	$450 00
Assistant Instructors in Manual Training Schools, first year, $804; annual increase, $48; maximum	900 00
Principal of Schools of Cookery	1,000 00
Instructors in Schools of Cookery, first year, $456; annual increase, $48; maximum	744 00
Instructor in School on Spectacle Island (including all expenses connected with the school, except for books)	400 00
Instructor Military Drill	2,000 00
Armorer	900 00

Teachers of sewing:

One division	$108	Eight divisions	$588
Two divisions	192	Nine divisions	636
Three divisions	276	Ten divisions	684
Four divisions	348	Eleven divisions	732
Five divisions	420	All over eleven divisions	744
Six divisions	492		
Seven divisions	540		

Principal Evening High School (per week), first year, $40; second year, $45; third year and subsequently	$50 00
Assistants, Evening High School (per evening),	4 00
Principals, Evening Elementary Schools, in schools where average attendance for month is 100 pupils or more (per evening), $5; in schools where average attendance for month is less than 100 (per evening)	4 00
First Assistants, Evening Elementary Schools in schools where average attendance for month is 75 pupils or more (per evening), $2.50; in schools where average attendance for month is less than 75 (per evening)	1 50

Assistants, Evening Elementary Schools (per evening)	$1 50
[1]Masters, Evening Drawing Schools (per evening),	10 00
Principals, Evening Drawing Schools (per evening) first year, $7; second year and subsequently	8 00
Assistants, Evening Drawing Schools (per evening) first year, $4; second year, $5; third year and subsequently	6 00
Special Assistant Teachers, lowest classes Primary Schools (per week)	5 00
Special Assistant Teachers, Kindergartens (per week)	5 00

Second Assistants, Primary Schools, in buildings having eight or more teachers, receive $60 each per annum in addition to the regular salary of the rank.

Masters elected as principals of High Schools, whose average whole number for the preceding school year exceeds one hundred pupils, receive $288; sub-masters elected as principals, $216, — each, in addition to the regular salary of the rank.

Temporary junior-masters receive $5, assistants High Schools, $2.50, sub-masters, $4, instructors, Mechanic Arts High School, $4, per day of actual service.

Other temporary teachers receive one-quarter of one per cent. of the maximum salary of the grade per day of actual service.

SALARIES OF JANITORS.

January 1, 1894.

HIGH SCHOOLS.

The salaries paid janitors per annum for taking care of the various High School buildings are as follows:

[1]The rank of master in Evening Drawing Schools shall be abolished as the position becomes vacant by the retirement of the present incumbents.

Latin and English High School:		
Engineer	$2,100 00	
Janitor of Latin School	1,200 00	
Janitor of English High School	1,920 00	
		$5,220 00
Girls' High School:		
Janitor	$1,920 00	
Assistant janitor	720 00	
		2,640 00
Dorchester High School		780 00
Charlestown " "		768 00
Roxbury " "		2,208 00
East Boston " "		552 00
Brighton " "		444 00
West Roxbury " "		540 00
Mechanic Arts High School		1,500 00
Total for High Schools		$14,652 00

KINDERGARTENS.

Walpole-street (per annum)	$300 00
Hudson-street "	216 00
Cottage-place "	156 00
North Margin-street "	168 00
North Bennet-street "	240 00
Parmenter-street "	240 00
Chambers-street "	240 00
Total	$1,560 00

Rooms of the School Committee:	
Janitor	$1,500 00
Assistant Janitor	696 00
Total	$2,196 00

SPECIAL SCHOOLS.

The salaries paid janitors for taking care of the rooms occupied for Evening Schools are based upon the number of rooms occupied, $12 per month being allowed for the first room, and, as a rule, $2 for each additional room while the schools are in session. The janitor of the Evening High School receives $50 per month while the school is in session,

and $100 additional for the term for the services of a door-keeper.

The salaries paid the past year for the Special Schools were as follows:

Horace Mann School	$960 00
Evening Schools	2,173 94
Evening Drawing Schools	349 00
Roxbury Manual Training School	540 00
Total for Special Schools	$4,022 94

GRAMMAR SCHOOLS.

The salaries paid janitors per annum for taking care of the various Grammar School buildings at the present time are as follows:

Hugh O'Brien	$1,404	Bunker Hill	$876
Henry L. Pierce	1,380	Dwight	876
Bennett and Branch	1,296	Eliot	876
Martin	1,200	Ware (Branch of Eliot)	360
Rice	1,200	Franklin	876
Hyde	1,176	Lewis	876
John A. Andrew	1,140	Lincoln	876
Emerson	1,116	Comins	864
Sherwin	1,116	Phillips	852
Gaston	1,104	Bigelow	828
Lowell	1,104	Brimmer	816
Dudley	1,080	Winthrop	816
Thomas N. Hart	1,080	George Putnam	792
Agassiz (New)	1,080	Quincy	792
Lyman	1,068	Washington Allston	792
Shurtleff	1,068	Charles Sumner	780
Bowditch	1,020	Edward Everett	756
Harvard	1,020	Robert G. Shaw	756
Lawrence	1,020	Prescott	744
Frothingham	1,008	Wells	744
Dearborn	960	Mather	708
Prince	960	Minot	696
Dillaway	948	Harris	672
Chapman	912	Bowdoin	600
Hancock	912	Gibson	600
Adams	900	Tileston	576
Warren	900	Stoughton	480
Everett	900	Agassiz (Old)	396
Norcross	888		
Total for Grammar Schools			$51,636

PRIMARY SCHOOLS.

The salaries amounting to three hundred dollars and over per annum, paid janitors for taking care of the various Primary School buildings, are as follows:

Cushman	$876	Wait	$456
Winchell	864	Old Dorchester High	444
George H. Plummer	816	Winship-pl.	444
Yeoman-st.	768	Bunker Hill	432
Appleton-st.	720	Florence-st.	432
Joshua Bates	720	Walnut-st. (Dor.)	432
Lucretia Crocker	720	Drake	420
St. Botolph-st.	720	Webster-pl.	420
Ticknor	696	Bailey-st.	408
Cyrus Alger	672	George-st.	408
Howe	672	No. Harvard-st.	384
Quincy-st. (Rox.)	648	Old Mather	372
Mather (S.B.)	636	Bartlett-st.	360
Starr King	636	Parkman	360
Roxbury-st.	624	Pormort	360
Weston-st.	624	Skinner	360
Benjamin Pope	600	Baldwin	348
Margaret Fuller	600	Cook	348
Wm. Wirt Warren	600	Medford-st.	348
Wyman	600	Mt. Vernon-st.	348
Noble	588	Common-st.	336
Tappan	588	Poplar-st.	336
Concord-st.	564	Williams	336
Hawes and Simonds	552	Sumner-st. (Dor.)	324
Phillips-st. (Rox.)	552	Tuckerman	324
Clinch	540	Webb	324
Harvard Hill	540	Tyler-st.	312
Howard-ave.	540	Freeman	300
Polk-st.	540	Hillside	300
Thetford-st.	492	School-st. (Dor.)	300
B. F. Tweed	480	Austin	300
Capen	480	Dorchester-ave.	300
Rutland-st.	480	Somerset-st.	300
Sharp	480		
Lyceum Hall	468		$34,140
Blackinton	468		

In addition to the above, the care of forty-four school-houses, each at a salary of less than three hundred dollars per annum, amounts to 8,628

Total for Primary Schools $42,768

APPROPRIATIONS AND EXPENDITURES

FOR

PUBLIC SCHOOLS.

APPROPRIATIONS AND CREDITS.

Appropriation granted by the City Council . .		$1,994,000 00	
Received from the State of Massachusetts, for travelling expenses of pupils in Horace Mann School . . .		2,356 13	
			$1,996,356 13

EXPENDITURES.

1893. *Requisitions in accordance with the same for February.*			
Instructors	$123,874 65		
Officers . .	5,091 67		
Janitors . .	9,740 35		
Fuel, gas, and water . .	4,918 64		
Incidentals .	6,008 30		
Repairs . .	11,222 76		
		$160,856 37	
Requisitions for March.			
Instructors .	$126,562 41		
Officers . .	5,091 67		
Carried forward,	$131,654 08	$160,856 37	$1,996,356 13

Brought forward,	$131,654 08	$160,856 37	$1,996,356 13
Janitors . .	9,782 00		
Fuel, gas, and water . .	5,065 51		
Incidentals .	6,528 71		
Repairs . .	6,461 29		
		159,491 59	
Requisitions for April.			
Instructors .	$125,302 61		
Officers . .	5,091 66		
Janitors . .	9,575 67		
Fuel, gas, and water . .	3,770 97		
Incidentals .	3,636 44		
Repairs . .	10,281 33		
		157,658 68	
Requisitions for May.			
Instructors .	$117,633 54		
Officers . .	5,185 01		
Janitors . .	9,381 02		
Fuel, gas, and water . .	8,477 65		
Incidentals .	5,117 69		
Repairs . .	11,590 01		
		157,384 92	
Requisitions for June.			
Instructors .	$117,546 64		
Officers . .	5,291 67		
Janitors . .	9,356 42		
Fuel, gas, and water . .	2,907 62		
Incidentals .	10,726 14		
Repairs . .	11,608 62		
		157,437 11	
Carried forward,		$792,828 67	$1,996,356 13

Brought forward,		$792,828 67	$1,996,356 13
Requisitions for July.			
Instructors	$233,680 55		
Officers	10,583 33		
Janitors	9,296 00		
Fuel, gas, and water	498 28		
Incidentals	8,219 43		
Repairs	11,428 21		
		273,705 80	
Requisitions for August.			
Janitors	$9,295 00		
Fuel, gas, and water	11,140 90		
Incidentals	8,898 61		
Repairs	10,920 12		
		40,254 63	
Requisitions for September.			
Instructors	$116,712 38		
Officers	5,301 67		
Janitors	9,288 00		
Fuel, gas, and water	37,393 12		
Incidentals	20,755 00		
Repairs	34,137 18		
		223,587 35	
Requisitions for October.			
Instructors	$115,056 56		
Officers	5,096 67		
Janitors	9,273 97		
Fuel, gas, and water	9,627 17		
Incidentals	5,053 76		
Repairs	31,001 20		
		175,109 33	
Carried forward,		$1,505,485 78	$1,996,356 13

Brought forward,		$1,505,485 78	$1,996,356 13
Requisitions for November.			
Instructors	$127,720 95		
Officers	5,096 66		
Janitors	9,761 25		
Fuel, gas, and water	623 79		
Incidentals	4,959 44		
Repairs	19,906 00		
		168,068 09	
Requisitions for December.			
Instructors	$134,043 49		
Officers	5,096 67		
Janitors	9,923 50		
Fuel, gas, and water	979 61		
Incidentals	3,673 12		
Repairs	16,885 09		
		170,601 48	
1894. *Requisitions for January.*			
Instructors	$131,917 25		
Officers	5,096 66		
Janitors	9,839 67		
Fuel, gas, and water	1,263 73		
Incidentals	4,314 33		
Repairs	15,023 25		
		167,454 89	
Total expense,		$2,011,610 24	
Balance provided for by City Auditor			15,254 11
		$2,011,610 24	$2,011,610 24

EXPENDITURES BY THE SCHOOL COMMITTEE.

SALARIES OF OFFICERS.

Superintendent	$4,200 00
Superintendent's Clerk	720 00
Supervisors (six)	22,680 00
Secretary	2,880 00
Secretary's assistants (two)	1,920 00
Auditing Clerk	2,880 00
Auditing Clerk's assistant	1,320 00
Assistant in offices of School Board	600 00
Copyist	900 00
Messenger	960 00
"	480 00
"	390 00
"	200 00
Truant-officer, Chief	1,800 00
Truant-officers (eighteen)	20,093 34
Total for officers	$62,023 34

SALARIES OF INSTRUCTORS.

High Schools.	
Normal	$16,406 43
Latin	42,750 06
Girls' Latin	12,187 05
English High	59,266 95
Girls' High	36,918 89
Roxbury High	22,763 59
Dorchester High	12,172 90
Charlestown High	11,687 02
East Boston High	8,017 06
Carried forward,	$222,169 95

Brought forward,	$222,169 95	
West Roxbury High . .	7,464 16	
Brighton High . . .	6,856 63	
Mechanic Arts High . .	4,681 07	
Total for High Schools . . .		$241,171 81
Grammar Schools.		
Adams	$11,499 30	
Agassiz	10,771 86	
Bennett	11,244 77	
Bigelow	16,142 47	
Bowditch	10,499 33	
Bowdoin	11,177 40	
Brimmer	15,273 46	
Bunker Hill . . .	16,153 83	
Chapman	14,286 68	
Charles Sumner . . .	14,760 66	
Comins	12,852 78	
Dearborn	14,621 83	
Dillaway	12,662 83	
Dudley	15,783 93	
Dwight	15,269 40	
Edward Everett . . .	13,021 98	
Eliot	22,408 30	
Emerson	14,984 40	
Everett	13,950 55	
Franklin	13,383 07	
Frothingham . . .	13,105 21	
Gaston	13,809 34	
George Putnam . . .	8,262 80	
Gibson	9,887 29	
Hancock	14,223 81	
Harris	8,657 35	
Carried forward,	$348,694 63	$241,171 81

Brought forward,	$348,694 63	$241,171 81
Harvard	14,075 81	
Henry L. Pierce	12,533 52	
Hugh O'Brien	14,373 44	
Hyde	12,761 79	
John A. Andrew	15,204 84	
Lawrence	19,113 44	
Lewis	14,676 50	
Lincoln	14,002 48	
Lowell	15,285 84	
Lyman	13,388 20	
Martin	10,373 51	
Mather	14,037 84	
Minot	8,249 92	
Norcross	14,625 24	
Phillips	17,006 82	
Prescott	11,456 60	
Prince	11,472 24	
Quincy	13,672 68	
Rice	12,912 36	
Robert G. Shaw	7,521 17	
Sherwin	12,717 11	
Shurtleff	14,030 60	
Stoughton	7,994 93	
Thomas N. Hart	11,364 76	
Tileston	3,994 65	
Warren	13,616 18	
Washington Allston	15,296 29	
Wells	12,732 67	
Winthrop	16,113 38	
Total for Grammar Schools		723,299 44
Carried forward,		$964,471 25

Brought forward,		$964,471 25
Primary Schools by Districts.		
Adams District . . .	$4,448 58	
Agassiz " . . .	3,143 92	
Bennett " . . .	5,002 53	
Bigelow " . . .	8,579 88	
Bowditch " . . .	6,893 68	
Bowdoin " . . .	5,160 53	
Brimmer " . . .	5,249 33	
Bunker Hill District . .	7,101 47	
Chapman " . .	4,263 20	
Charles Sumner District .	7,528 14	
Comins " .	4,536 00	
Dearborn " .	10,761 36	
Dillaway " .	5,660 53	
Dudley " .	9,157 89	
Dwight " .	7,286 11	
Edward Everett " .	5,675 74	
Eliot " .	6,425 61	
Emerson " .	8,563 96	
Everett " .	6,958 76	
Franklin " .	8,364 87	
Frothingham " .	6,242 80	
Gaston " .	7,005 04	
George Putnam " .	3,595 24	
Gibson " .	4,324 61	
Hancock " .	12,215 74	
Harris " .	4,099 21	
Harvard " .	7,826 53	
Henry L. Pierce " .	4,401 79	
Hugh O'Brien " .	7,963 30	
Hyde " .	6,637 38	
John A. Andrew " .	8,322 27	
Carried forward,	$203,396 00	$964,471 25

Brought forward,	$203,396 00	$964,471 25
Lawrence District . .	11,955 15	
Lewis " . .	7,166 93	
Lincoln " . .	4,487 78	
Lowell " . .	10,731 07	
Lyman " . .	6,202 15	
Martin " . .	2,590 94	
Mather " . .	7,396 95	
Minot " . .	2,981 11	
Norcross " . .	9,816 00	
Phillips " . .	4,271 65	
Prescott " . .	5,364 24	
Prince " . .	3,859 40	
Quincy " . .	8,495 73	
Rice " . .	6,338 00	
Robert G. Shaw District .	3,269 80	
Sherwin " .	6,810 00	
Shurtleff " .	4,537 73	
Stoughton " .	2,741 72	
Thomas N. Hart " .	6,827 89	
Tileston " .	1,152 38	
Warren " .	4,982 93	
Washington Allston District,	7,841 94	
Wells District . . .	11,202 49	
Winthrop " . . .	4,266 36	
Total for Primary Schools . . .		348,686 34
Special Schools.		
Horace Mann . $12,030 14		
Kindergartens . 46,808 89		
Manual Training, 15,684 90		
	$74,523 93	
Carried forward,	$74,523 93	$1,313,157 59

Brought forward,		$74,523 93	$1,313,157 5
Evening Schools.			
Evening High	$14,529 50		
Allston . .	975 00		
Bigelow . .	2,197 50		
Comins . .	2,596 50		
Dearborn . .	1,681 00		
Eliot . .	2,463 00		
Franklin . .	4,233 00		
Hancock . .	2,367 00		
Lincoln . .	1,360 50		
Lyman . .	2,056 50		
Phillips . .	1,361 50		
Quincy . .	2,074 00		
Sherwin . .	1,355 00		
Warren . .	1,896 50		
Warrenton-st. Chapel,	561 C0		
Wells . .	2,526 00		
		44,233 50	
Evening Drawing Schools.			
Tennyson-st. .	$2,933 00		
Charlestown .	2,602 00		
Warren-ave. .	2,172 00		
Roxbury . .	1,731 00		
East Boston .	1,692 00		
		11,130 00	
Special Instructors.			
Music . .	$14,297 68		
Physical Training,	5,000 00		
Drawing . .	4,800 00		
Military Drill and Armorer .	2,908 33		
		27,006 01	
Total for Special Schools and Special Instructors			156,893 4
Total for School Instructors .			$1,470,051 0

SALARIES OF JANITORS.

Amount paid during the year	$114,512 85

FUEL, GAS, AND WATER.

Fuel	$74,634 19
Gas and electric lighting	6,863 62
Water	5,169 18
Total	$86,666 99

SUPPLIES AND INCIDENTALS.

Books	$29,026 17
Phil. apparatus and supplies	1,606 38
Slates, erasers, etc.	1,724 41
Pianos; tuning, repairs, etc.	2,147 25
Expressage	118 95
Extra labor and clerk-hire	178 50
Printing	7,070 16
Diplomas	1,706 92
Maps, globes, and charts	810 61
Car and ferry tickets (refunded by State)	1,917 71
Stationery, drawing materials, and postage	13,293 06
Advertising	310 33
Annual festival	2,319 97
Delivering supplies	6,344 50
Janitors' supplies	3,946 11
Horse and carriage expenses and hire	460 00
Census, including books	1,500 00
Military drill, arms, etc.	296 94
Manual Training supplies	5,232 95
Kindergarten supplies and services of maids,	2,016 09
Reports of proceedings of School Committee,	500 00
Removing ashes	822 50
Teaming	118 95
Tuition, Boston pupils in Brookline schools,	480 23
Entertainment, Nat. Supt. Ass'n	440 50
Carried forward,	$84,389 19

Brought forward,		$84,389 19
Expenses World's Fair		2,770 02
District Telegraph and rent of telephones		285 35
Sewing materials		132 56
Sundries		313 85
Total for Supplies and Incidentals		$87,890 97

FURNITURE, REPAIRS, AND ALTERATIONS.

Furniture		$26,919 25
Carpentry, lumber, and hardware		30,071 08
Heating-apparatus and ventilation		24,940 04
Masonry, paving, drains, etc.		15,421 57
Rents and taxes:		
High Schools	$474 17	
Grammar Schools	1,450 00	
Primary Schools	6,147 63	
Evening Drawing School, East Boston	940 00	
Kindergartens	950 00	
Manual Training	1,800 00	
		11,761 80
Painting and glazing		9,147 52
Whitening and plastering		8,962 23
Blackboards		4,656 72
Locks, keys, and electric bells		2,304 01
Roofing, gutters, and conductors		9,919 49
Iron and wire work		2,325 17
Fire-escapes, new, repairs and rent		1,327 48
Sash elevators and weather-strips		1,335 69
Plumbing and gas-fitting		16,972 33
Teaming and supplies and cleaning buildings,		5,655 72
Asphalt in cellars and yards		986 26
Horse-shoeing, board of horses, and repairs of carriages and harnesses		2,002 62
Carried forward,		$174,708 98

Brought forward,	$174,708 98
Salaries	7,800 00
Advertising, stationery, postage, etc.	426 17
Rent and care of auxiliary fire-alarm boxes	2,434 24
Sewer assessments	625 39
Cleaning vaults	3,003 50
Flag-staffs, new, and care of old	686 98
Gas regulator	168 75
Electric-light fixtures	398 75
Miscellaneous	212 30
Total for repairs, etc.	$190,465 06

TOTAL AMOUNT EXPENDED BY THE SCHOOL COMMITTEE.

Salaries of officers	$62,023 34
Salaries of instructors	1,470,051 03
Salaries of janitors	114,512 85
Fuel, gas, and water	86,666 99
Supplies and incidentals	87,890 97
Furniture, repairs, etc.	190,465 06
Total expenditure from the appropriation,	$2,011,610 24
Expended for Dorchester Schools, from income of Gibson Fund	907 08
Gross expenditure	$2,012,517 32
Less income	40,709 13
Net expenditure for the year	[1] $1,971,808 19

[1] The City Auditor charged $100 additional to this amount on account of a flag-staff voted by the City Council.

PUBLIC SCHOOLS.

The Public Schools of the city proper and its annexed wards comprise one Normal School, two Latin Schools, nine High Schools (including the Mechanic Arts High School), fifty-five Grammar Schools, four hundred and ninety-three Primary classes, forty-seven Kindergartens (employing eighty-one teachers), one School for the Deaf, one Evening High School (with a branch each in Charlestown and East Boston), fifteen Evening Elementary Schools, five Evening Drawing Schools, fourteen Manual Training Schools, and fourteen Schools of Cookery.

NORMAL, LATIN, AND HIGH SCHOOLS.

Name.	Location.	No. of feet in lot.	When built.	Valuation, May, 1893.	No. of Rooms.	No. of regular Instructors.	Remarks.
Normal	Dartmouth st. . .	. . .	. .	. . . . .	2 and hall.	9	Occupies the upper story of the Rice and one room in the Appleton-street School-house.
Latin	Dartmouth and Montgomery sts. and Warren ave.	85,560	1880	$579,000	78 & 2 halls.	17	(78) Including rooms for recitation and apparatus.
English High .	. . . . .	. . .	. .	. . . . .	. . . . .	24	
Girls' High . .	W. Newton st. .	30,454	1870	253,400	66 and hall.	22	(66) Including rooms for recitation and apparatus.
Girls' Latin . .	. . . . .	. . .	. .	. . . . .	. . . . .	8	Occupies six rooms in Girls' High School building.
Roxbury High .	Warren st. . . .	25,617	1891	224,800	19 and hall.	15	
Dorchester High,	Dorchester ave. .	59,340	1870	77,800	6 and hall.	8	
Charlestown High	Monument sq. . .	10,247	1848	65,400	10 and hall.	7	Remodelled in 1870.
W. Roxbury High	Elm st., J.P. . .	32,262	1867	43,000	5	5	
Brighton High .	Academy Hill . .	54,448	1841	13,400	5 and hall.	4	
E. Boston High .	Meridian st. . . .	13,616	1884	60,000	6 and hall.	5	Library and Court-rooms attached.
Mechanic Arts High	Belvidere st. . .	22,881	1893	[1] 170,000	16	6	

[1] Cost to Jan. 1, 1894.

EXPENDITURES FOR THE NORMAL, LATIN, AND HIGH SCHOOLS.

Aggregate expenditures made by the Board of School Committee for the High Schools of the city during the financial year 1893–94:

Salaries of instructors		$241,171 81
Expenditures for text-books, maps, globes, drawing materials, stationery, etc.		10,466 33
Janitors		13,452 42
Fuel, gas, and water		12,234 85
		$277,325 41
Furniture, repairs, etc.		20,088 81
Total expense for High Schools		$297,414 22
Number of instructors in High Schools, exclusive of temporary teachers, and special instructors in French, German, Calisthenics, Drawing, Music, and Military Drill		130
Salaries paid the same		$230,517 08
Average amount paid each instructor		$1,773 21
Temporary teachers employed during the year,		5
Salaries paid the same		$1,376 45
Average number of pupils belonging		3,892
Salaries paid to special instructors in French, German, and Calisthenics, and assistants in laboratory		$9,278 28
Average cost of each pupil		$76 42
Average number of pupils to a regular instructor, including principal		30

The original cost of the buildings and land for the various High Schools, including the Mechanic Arts High School, to Jan. 1, 1894, amounted in the aggregate to about $1,730,000.

GRAMMAR SCHOOLS.

Name.	Location.	No. of feet in lot.	When built.	Valuation, May, 1893.	No. of rooms.	No. of regular instructors.	Remarks
Adams	Belmont sq., E.B. .	21,000	1856	$63,400	13 and hall.	10	
Agassiz	Burroughs st., J.P.	42,244		77,600	12 "	11	
Bennett . . .	Chestn't Hill av., Br.	26,648	1874	51,700	7 "	7	
Bennett B'ch.	Dighton pl., Bri. .	9,605	1886	17,400	6	4	
Bigelow	Fourth st., S.B. . .	12,660	1850	57,800	14 "	15	
Bowditch . . .	Green st., J.P. . .	23,655	1891	33,100	12 "	11	
Bowdoin . . .	Myrtle street . . .	4,892	1848	47,000	8	11	
Brimmer . . .	Common street . .	11,401	1843	87,200	14 "	14	
Bunker Hill . .	Baldwin st., Ch'n .	19,690	1866	76,000	14 "	15	
Chapman . . .	Eutaw st., E.B. . .	20,500	1850	61,800	13 "	13	
Chas. Sumner .	Ashland st., W.R. .	30,000	1877	33,600	10 "	15	Inc. three in P School build
Comins	Tremont st., Rox. .	22,169	1856	63,800	13 "	12	
Dearborn . . .	Dearborn pl., Rox.	36,926	1852	47,200	14 "	14	
Dillaway . . .	Kenilworth st., Rox.	21,220	1882	81,200	12 "	13	
Dudley	Dudley st., Rox. .	26,339	1874	107,900	14 "	14	
Dwight	W. Springfield st. .	19,125	1857	88,700	14 "	14	
Edw. Everett .	Sumner st., Dor. .	43,738	1876	31,600	10 "	12	
Eliot	North Bennet st. .	11,077	1838	73,000	14 "	22	Inc. one each mort and Fi Schools.
Ware	North Bennet st. .	6,439	1852	28,000	4 and ward-room.		
Emerson	Prescott st., E.B. .	39,952	1865	110,000	16 and hall.	16	Inc. two in inton Schoo
Everett	W. Northampton st.	32,409	1860	100,500	14 "	15	
Franklin	Ringgold st.	16,439	1859	91,100	14 "	14	
Frothingham .	Prospect st., Ch'n .	22,079	1874	82,600	16 "	13	
Gaston	East Fifth st., S.B.	35,358	1872	44,400	14 "	14	Inc. one in Pope Schoo
George Putnam	Seaver st., Rox. .	33,750	1880	28,400	10 "	8	
Gibson	Columbia st., Dor.	25,087	1872	53,800	8	9	Inc. three i Gibson Sch
Hancock	Parmenter st. . . .	28,197	1847	74,500	14 "	16	
Harris	Adams st., Dor. . .	37,150	1861	25,000	9 "	9	Inc. one in D ter-avenue
Harvard	Devens st., Ch'n .	16,306	1871	102,400	14 "	14	
Henry L. Pierce,	Washington st., Dorchester . . .	66,342	1891	93,000	12 "	14	

Grammar Schools. — *Concluded.*

Name.	Location.	No. of feet in lot.	When built.	Valuation, May, 1893.	No. of rooms.	No. of regular instructors.	Remarks.
Hugh O'Brien	Dudley st., Rox.	36,954	1887	$103,500	14 and hall.	15	
Hyde	Hammond st., Rox.	20,754	1884	84,000	14 "	13	
John A. Andrew	Dorchester st., S.B.	24,889	1876	65,000	16 "	15	
Lawrence	B and Third streets, S.B.	14,343	1856	54,300	14 "	15	Inc. two in Mather School.
Lewis	Sherman st., Rox.	27,850	1868	73,900	12 "	15	Inc. two in Quincy-street School.
Lincoln	Broadway, S.B.	24,500	1859	40,300	14 "	12	
Lowell	Centre st., Rox.	35,241	1874	58,000	14 "	15	
Lyman	Gove st., E.B.	26,200	1870	92,000	14 "	12	
Martin	Huntington avenue, Roxbury	30,000	1885	70,000	14 "	8	
Mather	Meeting-House Hill, Dorchester	132,500	1872	92,000	10 "	15	Inc. three in Lyceum Hall School.
Minot	Neponset avenue, Neponset	31,500	1885	51,300	7 "	8	
Norcross	D street, S.B.	12,075	1868	62,700	14 "	15	
Phillips	Phillips street	11,190	1862	71,000	14 "	16	
Grant	Phillips street	3,744	1852	17,500	4	2	
Prescott	Elm street, Ch'n	16,269	1857	32,100	10 "	10	
Prince	Exeter street	22,960	1875	138,000	12 "	11	Inc. one in St. Botolph-st. School.
Quincy	Tyler street	12,413	1847	76,200	14 "	12	
Rice	Dartmouth street	27,125	1869	132,800	14 "	11	
Robert G. Shaw,	Hastings st., W.R.	40,000	1892	31,000	8 "	8	Inc. one in Washington-street School.
Sherwin	Madison sq., Rox.	32,040	1870	94,200	16 "	11	
Shurtleff	Dorchester st., S.B.	40,553	1869	111,500	14 "	14	
Stoughton	River st., Dor.	29,725	1856	18,600	8	7	
Thomas N. Hart	E. Fifth st., S.B.	37,500	1889	130,200	13 "	10	
Tileston	Norfolk st., Mat.	83,640	1868	35,000	8 "	4	
Warren	Summer st., Ch'n	14,322	1867	65,000	14 "	14	
Washington, Allston	Cambridge street, Allston	22,000	1878	46,000	10 "	10	Inc. one in Everett School.
Wm. Wirt Warren	Waverley st., No. Brighton	18,000	1892	42,400	6 "	5	
Wells	Blossom street	10,770	1868	89,600	10 "	13	Inc. one in Winchell School.
Winthrop	Tremont street	16,100	1855	267,500	14 "	15	

EXPENDITURES FOR THE GRAMMAR SCHOOLS.

Aggregate expenditures made by the Board of School Committee, for the Grammar Schools of the city, for the financial year 1893–94:

Salaries of instructors	$723,299 44
Salaries of janitors	52,450 62
Books, drawing materials, and stationery	26,842 89
Apparatus	37 49
Fuel, gas, and water	38,534 90
Janitors' supplies	1,693 81
Charts, maps, and globes	412 80
Miscellaneous items	2,205 23
	$845,477 18
Rent, furniture, repairs, etc.	80,545 75
Total expense for Grammar Schools	$926,022 93
Number of instructors in Grammar Schools, exclusive of temporary teachers, Sewing and special instructors	700
Salaries paid the same	$696,209 83
Average amount paid each instructor	$994 58
Temporary teachers employed	75
Salaries paid the same	$8,314 33
Average number of pupils belonging	32,700
Average cost of each pupil	$28 32
Average number of pupils to an instructor, including principal, and exclusive of special instructors above mentioned	47

Thirty-one instructors in Sewing were employed, who taught 271 divisions. The salary paid varies according to the number of divisions taught. Total amount paid to Sewing instructors, $18,775.28; average amount to each, $605.65.

PRIMARY SCHOOLS.

Name.	Location.	No. of feet in lot.	When built.	Valuation, May, 1893.	No. of rooms.	No. of instructors.
Abby W. May .	Thornton st., R.	12,300	1893	. . . . .	6	4
Adams street . .	Dorchester . . .	44,555	1861	$5,600	2	1
Andrews	Genesee st. . . .	5,393	1848	20,000	3	3
Appleton street .	. . . . .	18,454	1870	76,500	12	8
*Atherton	Columbia st., Dor.	. . . .	. . . .	. . . . .	8	2
Auburn	School st., Bri. .	12,340	. . . .	6,700	4	3
Austin	Paris street, E.B.	5,360	1849	19,800	6	5
Avon place . . .	Roxbury	10,057	1851	13,500	4	4
Bailey street . .	Dorchester . . .	21,838	1880	9,500	4	3
Baker street . .	West Roxbury .	10,464	1855	1,700	1	1
Baldwin	Chardon court . .	6,139	1864	32,300	6	5
Bartlett street . .	Roxbury	7,627	1846	20,700	6	4
B. F. Tweed . .	Cambridge st.,Ch.	16,727	1892	37,500	6	3
Benjamin Pope .	O st., S.B. . . .	20,000	1883	39,000	8	6
Blackinton . . .	Orient Heights, E.B.	29,166	1892	75,500	6 and hall.	2
Bunker Hill Pr. .	Charles st.,Ch'n .	. . . .	. . . .	12,200	8	7
Canterbury st. .	Cor. Bourne st., W.R. . .	20,121	1864	4,800	2	3
Capen	Sixth st., S.B. . .	12,354	1871	26,200	6	6
Chestnut avenue .	Jamaica Plain . .	13,733	. . . .	6,600	2	2
Clinch	F st., S.B.	13,492	1871	35,300	6	6
Common street .	Charlestown . . .	7,001	. . . .	18,400	6	4
Concord street .	W. Concord st. .	10,756	1845	66,100	10 and ward-room.	10
Cook	Groton street . .	10,170	1852	27,100	6	4
Cross street . . .	Charlestown . .	1,708	. . . .	3,400	2	2
Cushman	Parmenter street.	. . . .	1867	85,400	16	16
Cyrus Alger . .	Seventh st., S.B.	16,560	1880	48,600	8	8
Dorchester ave. .	Cor. Harbor View st., Dor. . .	27,808	1883	19,000	4	3
Drake	C street, S.B. . .	10,260	1869	30,300	6	5
*Emerson . . .	Prescott st., E.B.	. . . .	. . . .	. . . . .	. . . . .	1
Emerson	Poplar street . .	5,924	1861	26,800	6	7
Eustis street . .	Roxbury	13,534	1848	20,300	4	4
Everett	Brentwood st., Bri. . .	44,237	. . . .	8,600	2	1

*In Grammar building.

Primary Schools. — *Continued.*

Name.	Location.	No. of feet in lot.	When built.	Valuation, May, 1893.	No. of rooms.	No. of instructors.
Florence street	Roslindale	25,030	1862	$7,600	6	6
Fourth street	Cor. Dorch'r st., S.B.	....	....	.....	2	2
Freeman	Charter street	5,247	1868	33,100	6	5
Fremont place	Charlestown	7,410	....	4,700	1	1
Frothingham	Prescott st., Ch'n	....	....	.....	.....	4
Gaston	L., cor. Fifth st., S.B.	....	....	.....	.....	2
George H. Plummer	Sumner st., E.B.	21,878	1891	88,100	10 and hall.	5
* George Putnam,	Seaver st., Rox.	....	....	.....	.....	2
George street	Roxbury	18,894	1861	43,200	6	5
Gibson	School st., Dor.	44,800	1857	26,200	6	3
Glen road	Dorchester	25,827	1880	15,600	2	1
* Harris	Adams st., Dor.	....	....	.....	.....	3
Harvard Hill	Harvard st., Ch'n	4,645	....	18,000	8	7
Hawes Hall	Broadway, S.B.	16,647	1823	44,800	8	8
Heath street	Roxbury	10,669	1857	5,800	2	2
Hillside	Elm st., J.P.	18,613	1858	33,100	6	4
Hobart street	Faneuil	10,000	1884	5,300	2	1
Howard avenue	Dorchester	29,090	1882	51,500	6	6
Howe	Fifth st., S.B.	12,494	1874	38,700	8	7
Ingraham	Sheafe street	2,354	1848	12,400	3	3
Joshua Bates	Harrison ave.	15,237	1884	52,900	8	7
Lucretia Crocker,	Parker st., Rox.	30,000	1884	51,500	8	8
Lyceum Hall	Meeting-house Hill, Dor.	21,319	....	.....	6	3
Margaret Fuller	Glen road, J.P.	14,252	1892	34,300	6	4
* Martin	Huntington ave., Rox.	....	....	.....	.....	4
Mather	Broadway, S.B.	10,160	1842	45,800	12	6
Mead street	Charlestown	5,857	1847	17,000	4	4
Medford street	"	12,112	1886	18,400	4	2
Moulton street	"	8,130	....	7,300	4	4
Mt. Pleasant ave.,	Roxbury	9,510	1847	7,800	2	2
Mt. Vernon street	West Roxbury	22,744	1862	8,800	4 and hall.	3
Munroe street	Roxbury	13,021	1854	6,800	2	2
Noble	Princeton st., E.B.	17,500	1874	45,200	8	4

* In Grammar building.

Primary Schools. — *Continued.*

Name.	Location.	No. of feet in lot.	When built.	Valuation, May, 1893.	No. of rooms.	No. of instructors.
North Harvard st.	Brighton	20,750	1848	$11,500	4	4
Oak square . . .	"	9,796	. . . .	4,000	2	1
† Old Agassiz . .	Burroughs st., J.P.	. . . .	1849	22,000	6 and hall.	
Old Dor. High . .	Dor. ave., Dor. .	34,460	. . . .	5,700	4	3
Old Edw. Everett	Sumner st., " .	. . . .	1885	8,400	7	4
Old Mather . . .	Meeting-house Hill, Dor.	. . . .	1856	16,500	7	6
Parkman	Silver st., S.B. .	5,306	1848	15,200	6	3
Phillips street . .	Roxbury	20,355	1867	45,200	8	6
Pierpont	Hudson street . .	4,216	1850	24,000	4	2
Polk street . . .	Charlestown . .	12,143	1878	24,800	6	5
Pormort	Snelling place . .	4,373	1855	14,400	6	4
* Prince	Exeter street . .	. . . .	. . . .	. . . . .	. . . . .	3
* Quincy	Tyler street . . .	. . . .	. . . .	. . . . .	. . . . .	3
Quincy street . .	Dorchester . . .	20,000	1882	7,000	2	2
Quincy street . .	Roxbury	23,453	1875	26,900	8	4
Roxbury street .	"	14,147	1874	44,100	8	7
Rutland street . .	. . . . .	7,850	1851	31,800	6	3
Savin Hill	Dorchester . . .	20,060	1884	9,000	2	2
Sharp	Anderson street .	5,611	1824	39,000	6	5
* Sherwin	Madison sq., Rox.	. . . .	. . . .	. . . . .	. . . . .	4
Simonds	Broadway, S.B. .	. . . .	1840	14,700	3	3
Skinner	Fayette street . .	5,238	1870	36,000	6	6
Somerset street .	. . . . .	6,300	1824	80,000	4	3
Starr King . . .	Tennyson street .	11,095	1870	75,800	10 and hall.	1
St. Botolph street	Cor. Cumberland street.	16,000	1891	80,000	8	3
* Stoughton . . .	River st., Dor. .	. . . .	. . . .	. . . . .	. . . . .	3
Tappan	Lexington st., E.B. . . .	11,500	1873	45,400	8	6
Thetford street .	Dorchester . . .	29,879	1875	16,500	4	4
* Thomas N. Hart	E. Fifth st., S.B.,	. . . .	. . . .	. . . . .	. . . . .	4
Thomas street . .	Jamaica Plain . .	10,754	. . . .	6,800	4	3

* In Grammar building.
† Unoccupied at present.

Primary Schools. — *Concluded.*

Name.	Location.	No. of feet in lot.	When built.	Valuation, May, 1893.	No. of rooms.	No. of instructors.
Ticknor	Washington Village, S.B.	11,486	1865	$30,700	12	12
*Tileston	Norfolk st., Mat.,	. . . .	. . . .	. . . . .	. . . . .	2
Tuckerman . . .	Fourth st., S.B. .	11,655	1850	11,500	5	6
Tyler street . . .	. . . . .	3,900	1855	32,700	6	6
Union street . . .	Brighton	67,280	. . . .	10,400	2	1
Vernon street . .	Roxbury	17,256	1849	10,900	4	3
Vernon street . .	Cor. Auburn st., Roxbury	. . . .	. . . .	10,600	2	2
Walt	Shawmut ave. . .	16,341	1860	78,100	8	8
Walnut street . .	Neponset	22,790	1856	17,500	7	4
Walpole street . .	Roxbury	8,082	1865	32,200	4	1
*Warren	Summer st., Ch'n.	. . . .	. . . .	. . . . .	. . . . .	1
Washington st. .	Forest Hills . . .	27,450	1870	3,200	2	1
Washington st. .	Germantown. . .	18,130	. . . .	2,800	2	1
Way street . . .	. . . . .	2,508	1850	14,000	3	3
Webb	Porter st., E.B.	7,492	1853	18,700	6	4
Webster	Webster pl., Bri..	19,761	. . . .	7,000	4	5
Weston street . .	Roxbury	14,973	1877	50,000	8	8
Williams	Homestead st., Roxbury	26,145	1892	29,100	4	4
Winchell	Blossom street . .	14,465	1885	97,500	12	9
Winship	Winship pl., Bri..	34,336	1861	11,100	4	4
Winthrop street .	Roxbury	9,775	1857	10,900	4	4
Wyman	Wyman st., J.P..	30,414	1892	41,000	6	6
Yeoman street . .	Roxbury	18,200	1870	53,600	12	8

*In Grammar building.

In addition there are ten Primary teachers in rooms in hired buildings.

HIRED BUILDINGS.

In addition to the foregoing the following rooms have been hired for school purposes. Rent and taxes paid for the same during the year amounted to $11,761.80.

Agassiz Branch	705 Centre st., Jamaica Plain	Rent, $1,150 per annum.
Carey Hall	Clarendon Hills	" 500 "
Nawn's Building	Centre st., Roxbury	" 720 "
Day's Chapel	Parker st., Roxbury	" 350 "
Stoughton Branch	I.O.O.F. Building, Dorchester	" 550 "
East Boston Evening Drawing School	Stevenson's Block	" 940 "
Maverick Chapel	Bennington st., East Boston	Rent, $672 per annum, with heating.
Barnard Memorial	Warrenton st.	Rent, $600 per annum.
Kindergarten	7 Byron court, Roxbury	" 300 "
Manual Training	E street, South Boston	" 1,500 "
Kindergarten	Field's Building, Dorchester	Rent, $600 per annum. Unoccupied since Oct. 1, 1893.
Baker Building	405 Broadway, South Boston	Rent, $300 per annum. Unoccupied since Oct. 1, 1893.
Manual Training	Eliot st., Jamaica Plain	Rent, $300 per annum.
Wise Building	Roslindale	" 1,200 "
Gaston Branch	828 and 834 Fifth st., So. Boston,	" 600 "
Wells Branch	Chambers st.	Rent, $800 per annum, with one-half cost of the gas used.
East Boston High Branch	Savings Bank Building, E.B.	Rent, $520 per annum.
Kindergarten	Parmenter st.	" 1,000 "
Charles Sumner Branch	Church, Roslindale	" 850 "
Wise Block	Roslindale	" 1,000 "
Bacon Hall	Roxbury	Rent, $350 per annum. Unoccupied since Nov. 1, 1891.

EXPENDITURES FOR THE PRIMARY SCHOOLS.

Aggregate expenditures made by the Board of School Committee, for the Primary Schools of the city, for the financial year 1893–94:

Salaries of instructors		$348,686 34
Salaries of janitors		43,215 87
Books, drawing materials, and stationery		6,082 34
Apparatus		47 27
Fuel, gas, and water		28,611 21
Janitors' supplies		1,666 23
Miscellaneous items		1,580 81
		$429,890 07
Rent, furniture, repairs, etc.		69,212 20
Total expense for Primary Schools		$499,102 27
Number of instructors in Primary Schools, exclusive of temporary teachers and special assistants		493
Salaries paid the same		$338,295 36
Average amount paid to each instructor		$686 20
Temporary teachers employed		46
Salaries paid the same		$6,812 08
Special assistants employed		54
Salaries paid the same		$3,578 90
Average number of pupils belonging		26,141
Average cost of each pupil		$19 09
Average number of pupils to an instructor		53

The original cost of the various buildings, with the land, used for Grammar and Primary Schools, to Jan. 1, 1894, amounted in the aggregate to about $7,595,000.

KINDERGARTENS.

Name.	Location.	Valuation, May, 1893.	No. of instructors.	Remarks.
Adams	Belmont sq., E.B. . .	. . . . .	2	
Tappan	Lexington st., E.B. .	. . . . .	2	
Noble	Princeton st., E.B. . .	. . . . .	1	
Webb	Porter st., E.B. . . .	. . . . .	1	
Common street . .	Common st., Ch'n . .	. . . . .	2	
Polk street	Polk st., Ch'n	. . . . .	2	
B. F. Tweed . . .	Cambridge st., Ch'n .	. . . . .	2	
Sharp	Anderson st.	. . . . .	2	
North Bennet street,	39 North Bennet st. .	$7,700	4	2 Kindergartens in this building.
Cushman	Parmenter st.	. . . . .	2	
North Margin street,	64 North Margin st. .	. . . . .	2	
Parmenter	32 Parmenter st. . . .	. . . . .	1	Hired at an expense of $1,000 per annum.
Baldwin	Chardon court	. . . . .	2	
Winchell	Blossom st.	. . . . .	2	
Chambers street . .	38 Chambers st. . . .	. . . . .	1	
Barnard Memorial,	Warrenton st.	. . . . .	2	Hired at an expense of $600 per annum.
Appleton street . .	Appleton st.	. . . . .	2	
Prince	St. Botolph st.	. . . . .	2	
Pierpont	Hudson st.	. . . . .	2	
Starr King	Tennyson st.	. . . . .	2	
Rutland street . .	Rutland st.	. . . . .	2	
Joshua Bates . .	Harrison ave.	. . . . .	1	
Concord street . .	Concord st.	. . . . .	2	
Cook	Groton st.	. . . . .	1	
Ruggles street . . .	147 Ruggles st., Rox. .	. . . . .	2	
Walpole street . .	Walpole st., Rox. . .	. . . . .	2	
Howe	Fifth st., S.B. . . .	. . . . .	2	
Shurtleff	Dorchester st., S.B. .	. . . . .	2	
Thos. N. Hart . . .	H st., S.B.	. . . . .	2	
Cottage place . . .	Cottage pl., Rox. . . .	10,600	2	
Smith street	Smith st., Rox. . . .	4,100	2	
Phillips street . . .	Phillips st., Rox. . . .	. . . . .	1	
Yeoman street . .	Yeoman st., Rox. . .	. . . . .	2	

KINDERGARTENS — *Concluded.*

Name.	Location.	Valuation, May, 1893.	No. of instructors.	Remarks.
Kenilworth street	Kenilworth st., Rox.		2	
Geo. Putnam	7 Byron court, Rox.		1	Hired at an expense of $300 per annum.
Quincy street	Quincy st., Rox.		1	
George street	George st., Rox.		1	
Union street	Union st., Bri.		2	
Everett	Brentwood st., Bri.		1	
Hillside	Elm st., J.P.		1	
Margaret Fuller	Glen road, Dor.		2	
Westerly Hall	Centre st., W.R.		1	In Library Building.
Bailey street	Bailey st., Ash.		2	
Neponset	Walnut st., Nep.		2	
Lyceum Hall	M't'g-house Hill, Dor.		2	
Stoughton	River st., Dor.		2	

The expenses of these Kindergartens were as follows:

Salaries of instructors	$46,808 89
Kindergarten materials, piano, etc.	1,276 74
Services of maids	935 85
Books, drawing materials, and stationery	24 39
Janitors	1,371 00
Fuel, gas, and water	639 53
Miscellaneous items	36 20
Repairs, furniture, etc.	2,363 29
Total expense for Kindergartens	$53,455 89

Average number of pupils, 2,411; cost per pupil, $22.17.

SPECIAL SCHOOLS.

HORACE MANN SCHOOL FOR THE DEAF.

Name.	Location.	No. feet in lot.	When built.	Valuation, May, 1893.	No. rooms.	No. instructors.
Horace Mann .	Newbury street . . .	8,400	1890	$98,000	13	12

The expenses of this school were as follows:

Salaries of instructors		$12,030 14
Expenses for books, stationery, etc. . .		96 42
Car-fares and miscellaneous items . . .		1,892 73
Janitors		960 00
Fuel, gas, and water		609 27
		$15,588 56
Furniture, repairs, etc.		906 82
Total expense for the school . . .		$16,495 38

Average number of pupils belonging, 96.
Average number of pupils to an instructor, 8.
Average cost of each pupil, $171.83.

The city receives from the State $100 for each city pupil, and $105 from each out-of-town pupil. The amount received from this source, the past year, was $9,868.62.

MANUAL TRAINING SCHOOLS.

Schools of Carpentry.

Lyman School, Gove street	East Boston.
North Bennet street	Boston.
Appleton-street Primary	Boston.
Kenilworth street, two rooms	Roxbury.
E Street	South Boston.
Lyceum Hall, Meeting-house Hill . . .	Dorchester.
Henry L. Pierce School, Washington st.,	Dorchester.
Eliot School, Trustee Building, Eliot street,	Jamaica Plain.
Robert G. Shaw School, Hastings street .	West Roxbury.

Washington Allston School, Cambridge st.	Allston.
Bennett School, Chestnut Hill avenue . .	Brighton.
Tileston School, Norfolk street	Mattapan.
Medford street	Charlestown.

Schools of Cookery.

Lyman School, Gove street	East Boston.
Harvard School, Devens street	Charlestown.
North Bennet street	Boston.
Starr King School, Tennyson street . .	Boston.
Hyde School, Hammond street	Roxbury.
Kenilworth street, No. 1	Roxbury.
Kenilworth street, No. 2	Roxbury.
Drake School, Third street	South Boston.
Henry L. Pierce School, Washington street,	Dorchester.
Dorchester-avenue School, corner Harbor View street	Dorchester.
Bowditch School, Green street	Jamaica Plain.
Robert G. Shaw School, Hastings street .	West Roxbury.
Washington Allston School, Cambridge st.,	Allston.
Bennett School, Chestnut Hill avenue . .	Brighton.

The expenses of these schools were as follows:

Salaries of instructors	$15,684 90
Salaries of janitors	540 00
Fuel, gas, and water	1,029 32
Lumber, hardware, kitchen materials, etc. .	3,581 91
Miscellaneous items, including models . .	1,152 16
Furniture, repairs, etc.	3,562 89
Total expense for these schools . .	$25,551 18

The pupils attending the Manual Training Schools belong to and are included in the number belonging to the other grades of schools.

EVENING SCHOOLS.

Name.	Location.	Av. No. of instructors.	Remarks.
High	Montgomery street	26	In High School building.
High Branches	East Boston and Charlestown	8	In Lyman and Charlestown High School.
Bigelow School-house	Fourth street, South Boston	11	
Brighton	Waverley street, North Brighton	3	In William Wirt Warren School.
Comins School-house	Tremont street, Roxbury	12	
Dearborn "	Dearborn place, Roxbury	7	
Eliot "	North Bennet street	12	
Franklin "	Ringgold street	20	
Hancock "	Parmenter street	11	
Lincoln "	Broadway, South Boston	6	
Lyman "	Gove street, East Boston	9	
Phillips "	Phillips street	6	
Quincy "	Tyler street	9	
Sherwin "	Madison square, Roxbury	6	
Warren "	Summer street, Charlestown	9	
Barnard Memorial	Warrenton street	4	
Wells School-house	Blossom street	12	

EVENING DRAWING SCHOOLS.

Name.	Location.	Av. No. of instructors.	Remarks.
Charlestown	Old City Hall	7	
East Boston	Stevenson's Block, Central square	4	Hired at an expense of $940 per annum.
Roxbury	Municipal Court Building	4	
Tennyson street	Starr King School-house	7	
Warren avenue	Latin School-house	5	

EVENING SCHOOLS.

Salaries of instructors	$44,233 50
Expenses for books, stationery, etc.	1,719 54
Janitors	2,173 94
Fuel and gas	3,812 91
Furniture, repairs, etc.	1,026 14
Total expense for Evening Schools	$52,966 03

Average number belonging, including the High School and branches, 5,607.
Average number of instructors, 171.
Average cost of each pupil for the time, $9.45.

EVENING DRAWING SCHOOLS.

Salaries of instructors	$11,130 00	
Drawing materials, stationery, models, boards, etc.	647 05	
Janitors	349 00	
Fuel and gas	625 20	
Furniture, repairs, etc.	1,022 95	
Total expense for Evening Drawing Schools		13,774 20

Average number belonging, 632.
Number of instructors, 27.
Average cost of each pupil for the time, $21.79.

Aggregate expense for all Evening Schools, $66,740 23

EXPENDITURES FOR OFFICERS AND SPECIAL INSTRUCTORS.

Salaries paid Superintendent, Supervisors, Secretary, Auditing Clerk, Assistant Clerks, and Messengers	$40,130 00
Salaries paid nineteen Truant-Officers . .	21,893 34
" " nine Music Instructors . .	14,297 68
" " Drawing Director and Assistant.	4,800 00
" " Instructors in Physical Training,	5,000 00
" " Military Instructor and Armorer,	2,908 33
Stationery and record-books for School Committee and officers, and office expenses .	359 10
Fuel, gas, and water	569 80
Total	$89,958 25

INCIDENTAL EXPENSES.

These expenditures are made for objects not chargeable to any particular school, and consist chiefly of expenses for delivering supplies, printing, advertising, festival, board of horse, carriage-hire, tuning of pianos, and other small items.

Annual Festival	$2,319 97
Board of horse, with shoeing expenses and sundry repairs of vehicles and harnesses .	450 00
Carriage-hire	10 00
Advertising	310 33
Census of school children	1,500 00
Printing, printing-stock, binding, and postage,	7,794 16
Diplomas	1,706 92
Extra labor and clerk-hire	178 50
Military drill, sundry repairs, and transportation expenses of instructor. . . .	296 94
Carried forward,	$14,566 82

Brought forward,	$14,566 82
Teaming and expressage, including fares	118 95
Tuning and repairing pianos	1,320 00
Expenses, delivering supplies	6,344 50
District Telegraph, rent of telephones	285 35
Car and ferry tickets for pupils and messengers	351 04
Reporting proceedings School Committee	500 00
Removing ashes	822 50
Tuition of pupils, Brookline schools	480 23
Entertainment, National Superintendents' Association	440 50
Photographs, frames, etc., World's Fair	2,770 02
Sundry small items	182 72
	$28,182 63
Expenses connected with school-house repairs not charged to any particular school	11,736 21
Total	$39,918 84

SPECIAL EXPENDITURES BY CITY COUNCIL, CITY ARCHITECT, AND SCHOOL COMMITTEE.

Brighton High School-house, site and building	$17,660 00
Mechanic Arts High School-house	95,563 12
Agassiz School-house	54,139 50
Frothingham School-house, wall	12 50
Henry L. Pierce School-house	224 00
Robert G. Shaw School-house	641 98
Grammar School-house, Gibson District	75 77
Grammar School-house, No. Brighton, building	3,412 00
Grammar School-house, No. Brighton, furnishing	99 06
Grammar School-house, No. Brighton, site	141 89
Abby W. May Primary School-house	33,973 91
B. F. Tweed Primary School-house	402 72
Carried forward,	$206,346 45

Brought forward,	$206,346 45
Blackinton Primary School-house	609 30
Blackinton Primary School-house, furnishing	139 78
Cudworth Primary School-house	33,376 51
Margaret Fuller Primary School-house	672 39
Margaret Fuller Primary School-house, furnishing	266 45
St. Botolph-street Primary School-house, furnishing	709 62
Williams Primary School-house	70 50
Winchell Primary School-house, lot	700 11
Wyman Primary School-house	468 50
Primary School-house, Beech street, site	5,500 00
Primary School-house, Canterbury and Sharon streets	15 71
Primary School-house, Eustis street, building	18 50
Primary School-house, Eustis street, enlargement of lot	3,682 24
Primary School-house, Morton street	17 34
Primary School-house, Moulton street	18 75
Primary School-house, north of Broadway	26,729 20
Primary School-house, Oak Square	15 46
Total expenditure on account of new school-houses	$279,356 81

RECAPITULATION.

TOTAL EXPENDITURE.

School Committee.

High Schools,	per detailed statement,	$297,414 22
Grammar Schools,	" "	926,022 93
Primary Schools,	" "	499,102 27
Horace Mann School,	" "	16,495 38
Kindergartens,	" "	53,455 89
Manual Training Schools,	" "	25,551 18
Evening Schools,	" "	52,966 03
Evening Drawing Schools,	" "	13,774 20
Officers and Special Instructors, per detailed statement		89,958 25
Incidentals, per detailed statement		39,918 84
Carried forward,		$2,014,659 19

Brought forward,		$2,014,659 19
From Income Gibson Fund expended for Dorchester Schools		907 08
		$2,015,566 27
Stock delivered, purchased previous to Jan. 1, 1893		3,048 95
Gross expenditure		$2,012,517 32
Less income		40,709 13
Net expenditure, School Committee,		$1,971,808 19
Expended by vote of City Council for flag-staff in South Boston		100 00
Total net ordinary expenses		$1,971,908 19

SPECIAL EXPENDITURES.

Public Buildings and City Architect's Departments.		
High School, new building	$17,660 00	
" " Mechanic Arts	95,563 12	
Grammar Schools, new buildings	58,746 70	
Primary Schools, new buildings	107,386 99	
Total	$279,356 81	
Less income:		
Sale of school buildings and sites	10,300 00	
		269,056 81
Net expenditure for the Public Schools		$2,240,965 00

INCOME.

School Committee.

From State, for deaf-mute scholars	$9,868 62
non-residents	7,512 53
Gibson Fund	1,596 25
Smith Fund	384 00
Stoughton Fund	212 00
other sources	18,576 50
sale of books	203 10
Refunded by State, car-fares	2,356 13
Total income, School Committee	$40,709 13

SCHOOLS. — ESTIMATES, 1894–95.

School Committee,
Office of Accounts, Dec. 26, 1893.

Hon. Nathan Matthews, Jr., *Mayor:*

Dear Sir: The Committee on Accounts of the School Committee herewith transmit to you estimates of the amount which will be required to meet the expenses of the public schools for the financial year commencing on the first day of February, 1894, and ending January 31, 1895, exclusive of the expenses for the building of school-houses.

Very respectfully yours,

B. B. WHITTEMORE,
Chairman Com. on Accounts, School Committee.

SALARIES OF INSTRUCTORS.

First Grade.

7	Head-masters	at	$3,780	$26,460	
2	Masters	"	3,168	6,336	
23	"	"	2,880	66,240	
1	Junior-master	"	2,736	2,736	
4	Junior-masters	"	2,592	10,368	
1	Junior-master	"	2,448	2,448	
3	Junior-masters	"	2,304	6,912	
3	"	"	2,160	6,480	
3	"	"	2,016	6,048	
3	"	"	1,872	5,616	
2	"	"	1,728	3,456	
2	"	"	1,584	3,168	
2	"	"	1,440	2,880	
1	Junior-master	"	1,296	1,296	
1	"	"	1,152	1,152	
					$151,

Second Grade.

48	Masters	at	$2,880	$138,240	
4	"	"	2,820	11,280	
1	Master	"	2,760	2,760	
1	Sub-master	"	2,496	2,496	
13	Sub-masters	"	2,280	29,640	
2	"	"	2,220	4,440	
4	"	"	2,160	8,640	
3	"	"	2,100	6,300	
1	Sub-master	"	2,076	2,076	
1	"	"	2,040	2,040	
1	"	"	1,980	1,980	
6	Sub-masters	"	1,920	11,520	
7	"	"	1,860	13,020	
3	"	"	1,800	5,400	
4	"	"	1,740	6,960	
3	"	"	1,680	5,040	
2	"	"	1,620	3,240	
3	"	"	1,560	4,680	
1	Sub-master	"	1,500	1,500	
					261,[illegible]
	Carried forward,				$412,[illegible]

Brought forward,				$412,848
	Third Grade.			
1 Assistant Principal . . .	at	$1,800	$1,800	
3 First Assistants . . .	"	1,620	4,860	
2 Second Assistants . . .	"	1,380	2,760	
3 " " . . .	"	1,284	3,852	
23 Assistants	"	1,380	31,740	
3 "	"	1,332	3,996	
1 Assistant	"	1,284	1,284	
1 "	"	1,236	1,236	
5 Assistants	"	1,188	5,940	
3 "	"	1,140	3,420	
3 "	"	1,092	3,276	
9 "	"	1,044	9,396	
3 "	"	996	2,988	
2 "	"	948	1,896	
4 "	"	900	3,600	
2 "	"	852	1,704	
1 Assistant	"	804	804	
2 Assistants	"	756	1,512	
				86,064
	Fourth Grade.			
73 First Assistants . . .	at	$1,080	$78,840	
5 " " . . .	"	1,044	5,220	
3 " " . . .	"	1,008	3,024	
5 " " . . .	"	972	4,860	
1 First Assistant . . .	"	936	936	
8 Second Assistants . . .	"	876	7,008	
98 " " . . .	"	816	79,968	
11 " " . . .	"	804	8,844	
14 " " . . .	"	792	11,088	
13 " " . . .	"	780	10,140	
4 " " . . .	"	768	3,072	
287 Third Assistants . . .	"	744	213,528	
22 " " . . .	"	696	15,312	
30 " " . . .	"	648	19,440	
32 " " . . .	"	600	19,200	
26 " " . . .	"	552	14,352	
18 " " . . .	"	504	9,072	
7 " " . . .	"	456	3,192	
285 Fourth Assistants . . .	"	744	212,040	
24 " " . . .	"	696	16,704	
Carried forward,			$735,840	$498,912

Brought forward,		$735,840	$498,912
23 Fourth Assistants . . .	at $648	14,904	
20 " " . . .	" 600	12,000	
45 " " . . .	" 552	24,840	
19 " " . . .	" 504	9,576	
8 " " . . .	" 456	3,648	
10 Temporary Teachers, 100 days . . .		1,860	
10 Special Assistants, 200 days . . .		2,000	
			804,668

MECHANIC ARTS HIGH SCHOOL.

1 Head-master	at $3,780	$3,780	
2 Junior-masters . . .	" 1,872	3,744	
2 " . . .	" 1,440	2,880	
1 Instructor	" 1,860	1,860	
1 "	" 1,620	1,620	
2 Instructors	" 1,500	3,000	
2 Assistant Instructors . .	" 948	1,896	
2 " " . .	" 756	1,512	
			20,292

MANUAL TRAINING SCHOOLS.

1 Principal	at $2,004	$2,004	
Carpentry, 1 Instructor . .	" 1,200	1,200	
10 Assistants . .	" 900	9,000	
1 Assistant . .	" 804	804	
1 " . . .	" 450	450	
Cookery, Director . . .	" 1,000	1,000	
3 Instructors . . .	" 744	2,232	
1 Instructor . . .	" 696	696	
3 Instructors . . .	" 600	1,800	
2 " . . .	" 552	1,104	
2 " . . .	" 456	912	
Sewing, 31 Instructors, 277 Divisions . .		19,495	
			40,697

Special Grade.

School on Spectacle Island:			
Instructor			400
Normal School:			
Special Instructor of Kindergarten methods .		$2,400	
Assistant " " " " .		1,380	
			3,780
Carried forward,			$1,368,749

Brought forward,		$1,368,749
High Schools:		
Director of Modern Languages	$3,000	
2 Assistants " "	3,000	
1 Special Instructor of German	360	
		6,360
Horace Mann School:		
1 Principal	$2,508	
11 Assistants	9,408	
		11,916
Music:		
1 Instructor, High Schools	$2,640	
4 Instructors, Grammar and Primary Schools,	10,560	
4 Assistants, Primary Schools	3,408	
		16,608
Drawing:		
Director	$3,000	
Assistant Director	1,800	
		4,800
Chemistry:		
Girls' High, 1 Instructor	$1,620	
" " 1 Laboratory Assistant	804	
Roxbury High, 1 Laboratory Assistant	804	
		3,228
Physical Training:		
Director	$3,000	
Assistant	2,000	
		5,000
Vocal and Physical Culture:		
Girls' High, 1 Instructor	$1,200	
Girls' Latin, 1 Instructor	600	
		1,800
Military Drill:		
Instructor	$2,000	
Armorer	900	
		2,900
Evening High School:		
Head Master, 22 weeks	$1,100	
1 Assistant, 66 evenings	330	
29 Assistants, 22 weeks	12,760	
Clerk	330	
		14,520
Carried forward,		$1,435,881

Brought forward,			$1,435,881
Evening Elementary Schools:			
11 Principals, 22 weeks		$6,050	
4 Principals, 22 weeks		1,760	
13 First Assistants, 22 weeks		3,575	
104 Assistants, 22 weeks		17,160	
			28,545
Evening Drawing Schools:			
2 Masters, 66 evenings		$1,320	
3 Principals, 66 evenings		1,584	
19 Assistants, 66 evenings		7,524	
3 Assistants, 66 evenings		990	
5 Curators		660	
			12,078
Kindergartens:			
35 Principals	at $708	$24,780	
4 "	" 672	2,688	
2 "	" 636	1,272	
2 "	" 600	1,200	
23 Assistants	" 540	12,420	
10 "	" 504	5,040	
7 "	" 468	3,276	
5 "	" 432	2,160	
2 Special Assistants, 50 days		100	
			52,936
Total for Instructors			$1,529,440

SALARIES OF OFFICERS.

Superintendent	$4,200
Six Supervisors, at $3,780	22,680
Secretary	2,880
Auditing Clerk	2,880
Assistants in offices, School Department	4,560
Copyist	900
Messengers	2,160
Seventeen Truant Officers	21,000
Total for Officers	$61,260

SALARIES OF JANITORS.

Janitors of 11 High Schools	$15,000
" " 55 Grammar Schools	52,000
" " 109 Primary Schools	43,700
" " 36 Special and Evening Schools	5,600
" " School Committee Rooms	2,200
Total for Janitors	$118,500

FUEL, GAS, AND WATER.

13,000 tons of coal at $5.50 (including weighing)	$71,500
240 cords of wood (including splitting and housing)	2,800
Gas and electric lighting	7,500
Water	6,200
Total for fuel, gas, and water	$88,000

SUPPLIES AND INCIDENTALS.

Text-Books, Reference-Books, Exchange of Books,	$45,000
Books for Supplementary Reading	5,000
Annual Festival	2,500
Globes, Maps, and Charts	2,000
Musical Expenses:	
Instruments, Repairs, and Covers	2,700
Printing, and Stock used for same, including reports of School Committee meetings	7,800
Philosophical, Chemical, and Mathematical Apparatus and Supplies	2,200
School Census	1,500
Stationery, Drawing Materials, and Record Books	14,250
Slates, Diplomas, Pencils, Erasers, etc.	3,400
Advertising	450
Military Drill:	
Arms, Repairs, and expenses of Annual Parade	800
Removing ashes from school-houses, and snow from yards	2,000
Janitors' and other supplies	4,500
Supplies for Manual Training	6,000
Materials for Kindergartens, including maid service	2,400
Cost of work for delivering supplies, including salaries, expenses of teaming, repairs, repairing apparatus, etc.	6,500
Carried forward,	$109,000

Brought forward,	$109,000
Car and ferry tickets, Horace Mann School, refunded by State	2,000
Specimens for study of Natural History	2,000
Miscellaneous, including sewing materials, teaming, extra labor, horse and carriage expenses, postage, car and ferry tickets, receiving coal, extra clerk-hire, and sundry items	2,800
Total for Supplies and Incidentals	$115,800

SCHOOL-HOUSES, REPAIRS, ETC.

Rents and taxes	$20,000
New heating-apparatus and repairs of old	36,000
Plumbing and gas-fitting	20,000
Painting and glazing	30,000
Mason work, drains, and vaults	36,000
Plastering, whitening, and tinting	16,000
New furniture and repairs of old	40,000
Carpentry, lumber, and hardware	40,000
Roofing, gutters, and conductors	14,000
Blackboards	5,000
Salaries	9,000
Iron and wire work	6,000
Auxiliary fire-alarm, rental of	4,000
Teaming	1,800
Board and shoeing of horses, and repairs of carriage and harness	1,200
Total	$279,000

SCHOOL-HOUSES — SPECIAL APPROPRIATION.

Mather Primary School-house, South Boston; ventilation, new steam-heating, and sanitary improvements	$8,000
New ventilating-apparatus for school-houses, per request of State Board of Health	30,000
Additional means of egress from school-houses, and fire-proofing, as per request of Inspector of Buildings,	25,000
Agassiz School-house, new furniture	8,000
Thornton-street Primary School-house, new furniture	4,000
Cudworth Primary School-house, new furniture	4,000
Third-street Primary School-house, new furniture	4,000
Carried forward,	$83,000

Brought forward,	$83,000
Mechanic Arts High School, new furniture	5,000
Harbor View School-house, new heating and ventilating apparatus	2,000
Total	$90,000

RECAPITULATION.

Salaries of Instructors	$1,529,440
Salaries of Officers	61,260
Salaries of Janitors	118,500
Fuel, Gas, and Water	88,000
Supplies and Incidentals	115,800
School-houses — Repairs, etc.	279,000
Total ordinary expenses	$2,192,000
"Special Appropriation," extraordinary repairs	$90,000

INCOME.

Non-residents, State and city	$15,000
Trust funds and other sources	25,000
	$40,000

For the financial year 1893–94, the School Committee submitted estimates, exclusive of repairs, to the amount of $1,829,320. The City Council appropriated only $1,804,000, making a reduction of $25,320. The amount granted not proving sufficient for the needs of the schools, an additional appropriation of $15,000 was requested and granted.

For the coming year, to cover the same items, the sum of $1,913,000 is asked for, the increase required being larger than usual.

The fact that the city is growing, and that the yearly increase in the number of pupils averages from two to three per cent., must add steadily to the expense of carrying on the schools.

Aside from the increase in pupils, the city is now supporting a Mechanic Arts High School, which, it is expected, will add more than $25,000 annually to the running expenses of the schools.

Additional Kindergartens are being established in sections of the city wherein they have not existed, in order that all parts of the city may eventually have the advantage of this instruction. This adds to expense more than the ordinary increase in pupils would seem to indicate.

The large number of non-English speaking pupils entering our schools makes it necessary to employ more teachers than otherwise would be needed, as it is too much to expect a teacher to properly instruct fifty-six of such pupils.

The amount of coal consumed in 1893–94, compared with that in 1892–93, shows an increase of over one thousand tons.

The eleven new buildings lately acquired consume twice the amount of coal per pupil accommodated that the older buildings do.

The amount asked for, for fuel, gas, and water, the coming year, shows but a slight increase over the actual cost of these items for 1893–94.

Under the head of Supplies and Incidentals, which covers all the running expenses except salaries, fuel, gas, and water, and repairs, the sum of $115,800 is asked for.

This estimate is less than the average annual expense was fifteen to twenty years ago, although now we have about forty per cent. more pupils, and are obliged to furnish all pupils with books and supplies, under a free text-book law which did not then exist.

From 1873–74 to 1879–80, inclusive, the average annual expense under this head was $117,963.85. The net expense for this item in the year just closing will be about $86,000; but the introduction of new music books and charts, and materials required for drawing, in the coming year, will, it is expected, add largely to expenses.

For expenses that come under the head of Repairs and Alterations of School-houses the sum of $279,000 is requested. As the School Committee are limited to the amount appropriated, they cannot be held responsible for any defective condition of the school buildings if the money appropriated proves insufficient to make the needed repairs.

For some years past an appropriation has been requested with which to furnish better egress and fire-escapes for school buildings in accordance with the law, but it has not yet been granted. The School Committee again repeat the request, and ask for $55,000 for this purpose, under the head of School-houses, Special Appropriation. In addition, the sum of $35,000 is requested under this head, principally for new furniture.

The estimates herein submitted are, in the opinion of the committees having charge of their preparation, needed and should be granted.

For the Committee on Accounts,

BENJAMIN B. WHITTEMORE,
Chairman.

For the Committee on Supplies,

RICHARD C. HUMPHREYS,
Chairman.

The City Council made two appropriations for the Public Schools: one of $1,840,000 under the head of "School Committee," and the other of $190,000 under the head of "Public Buildings, Schools."

SCHOOL DOCUMENT NO. 4—1894

FOURTEENTH ANNUAL REPORT

OF THE

SUPERINTENDENT

OF

PUBLIC SCHOOLS

OF THE

CITY OF BOSTON

MARCH, 1894

BOSTON
ROCKWELL AND CHURCHILL, CITY PRINTERS
1894

REPORT.

To the School Committee:

The Superintendent of Public Schools respectfully submits his fourteenth annual report.

STATISTICS.

The principal items to be found in the statistical tables appended to this report are here given side by side with the corresponding items from the statistics of former years, to facilitate comparisons.

The whole number of pupils belonging to all the day schools on the 31st day of January, each year:

1890.	1891.	1892.	1893.	1894.
60,502	60,994	62,009	63,374	65,588

Belonging to each grade of day schools, January 31, each year:

Normal School:				
178	176	182	169	191
Latin and High Schools:				
3,090	3,274	3,444	3,406	3,675
Grammar Schools:				
31,347	31,504	31,294	31,706	32,681
Primary Schools:				
24,421	24,462	25,098	25,770	26,523
Kindergartens:				
1,466	1,778	1,991	2,323	2,518

The average number of pupils belonging to all the day schools during the five months ending January 31, each year:

1890.	1891.	1892.	1893.	1894.
60,367	60,919	61,661	63,233	65,144

The average number of pupils belonging to each grade of day schools during the five months ending January 31, each year:

Normal School:				
183	188	197	175	191
Latin and High Schools:				
3,213	3,322	3,488	3,487	3,701
Grammar Schools:				
31,777	31,675	31,398	31,899	32,700
Primary Schools:				
23,832	24,035	24,682	25,435	26,141
Kindergartens:				
1,362	1,699	1,896	2,237	2,411

The average number of pupils belonging to the special schools during the time these schools were in session to January 31, each year:

Horace Mann School for the Deaf:				
89	85	87	97	96
Evening High:				
1,998	2,132	2,148	1,760	2,041
Evening Elementary:				
2,968	3,243	3,119	3,220	3,566

1890.	1891.	1892.	1893.	1894.
Evening Drawing:				
559	628	666	643	632
Spectacle Island:				
22	15	15	17	16

SECONDARY SCHOOL STUDIES.

An event of unusual importance in educational circles has been the publication (near the end of the year 1893) of the "Report of the Committee on Secondary School Studies appointed at a meeting of the National Educational Association, July 9, 1892, with the Reports of the Conferences arranged by this Committee and held Dec. 28–30, 1892." The Report was published by the United States Bureau of Education. It has had a wide circulation, and is now generally referred to as "The Report of the Committee of Ten." The Commissioner of Education in his letter of transmittal to the Secretary of the Interior expresses the opinion that "the recommendations of this Report will draw the attention of great numbers of teachers to the question of educational values, and this will lead to a better understanding of what the pupil should study to gain the most from his work in school. In this respect I consider this the most important educational document ever published in this country."

There will be no hesitation in accepting this high estimate of its importance if we consider the manner in which the Report has been made.

In the first place the Report is the work of a committee of ten gentlemen who were appointed, not

alone because of their preëminent fitness for the vice desired of them, but also because they re sented with approximate equality the interest colleges on the one hand and of secondary sch including particularly public high schools, on other.

Next, the Report is based on the results of the liberations of nine Conferences of ten members e sitting in different places, and discussing earne and thoroughly for three days, questions which been submitted to the several members for their c sideration a long time in advance of their meeti These ninety members of Conferences had b selected by the Committee of Ten with due reg to the scholarship and experience of the gentle named, to the fair division of the members betw colleges on the one hand and schools on the ot and to the proper geographical distribution of total membership. The Conferences dealt with following departments of secondary school stud (1) Latin; (2) Greek; (3) English; (4) other M ern Languages; (5) Mathematics; (6) Physics, tronomy, and Chemistry; (7) Natural History; History, Civil Government, and Political Econo (9) Geography. Reports, some of them very e orate, were made to the Committee of Ten, and h been printed with the general report. "These r reports," says the Committee of Ten, "are cha terized by an amount of agreement which quite s passes the most sanguine expectations." . . . the great majority of matters brought before e Conference, the decision of the Conference was un

imous. When one considers the different localities, institutions, professional experiences, and peculiarities represented in each of the Conferences, the unanimity developed is very striking and should carry great weight." And further, "the several reports are so full of suggestions concisely and cogently stated that it is impossible to present adequate abstracts of them."

This rich store of material is crowned by the masterly report of the Committee of Ten. In this, the mass of facts and opinions reported by the Conferences, after careful analysis and criticism, becomes the basis of recommendations of the highest interest, not only to secondary education in the whole country, but also to the elementary education which comes before and to the collegiate education which comes after it. For we should remember that stages in education, like periods in the life of man, are vitally connected from beginning to end. This is necessarily true of the person educated, and of aggregates of such persons; and it ought to be true of the institutions and of the processes by which education is given. It ought not to be possible, therefore, to make considerable changes in secondary education without affecting at the same time elementary and higher education.

True it is, however, that in the organization of the elementary, secondary, and collegiate grades of instruction in the United States for half a century past, far too slight regard has been paid to securing this vital continuity of education from grade to grade. Public high schools in particular have been dis-

tracted and their courses of study have been wrecked by their striving to fulfil two separate purposes at the same time; namely, to give preparatory training for college, and to crown elementary education with a brief finishing course for practical life. The Committee of Ten have made recommendations which, if generally adopted, will unite these divergent purposes into one, and so give to the work of secondary schools, throughout the country, a desirable unity, now wanting, as well as enhanced strength and value. The deplorable gap which has long existed between the public high schools and the colleges, in so far at least as the great majority of high school pupils is concerned, will be closed up. And what is most propitious, the college men express a willingness to come fully half way in the matter. The following language is most welcome:

The secondary schools of the United States, taken as a whole, do not exist for the purpose of preparing boys and girls for colleges. Only an insignificant percentage of the graduates of these schools go to colleges or scientific schools. Their main function is to prepare for the duties of life that small proportion of all the children in the country — a proportion small in number, but very important to the welfare of the nation — who show themselves able to profit by an education prolonged to the eighteenth year, and whose parents are able to support them while they remain so long at school. There are, to be sure, a few private or endowed secondary schools in the country, which make it their principal object to prepare students for the colleges and universities; but the number of these schools is relatively small. A secondary school programme intended for national use must therefore be made for those children whose education is not to be pursued beyond the secondary school. The preparation of a few pupils for college or scientific school should in the ordinary secondary

school be the incidental and not the principal object. At the same time, it is obviously desirable that the colleges and scientific schools should be accessible to all boys or girls who have completed creditably the secondary school course. Their parents often do not decide for them, four years before the college age, that they shall go to college, and they themselves may not, perhaps, feel the desire to continue their education until near the end of their school course. In order that any successful graduate of a good secondary school should be free to present himself at the gates of the college or scientific school of his choice, it is necessary that the colleges and scientific schools of the country should accept for admission to appropriate courses of their instruction the attainments of any youth who has passed creditably through a good secondary school course, no matter to what group of subjects he may have mainly devoted himself in the secondary school.

The recommendations of the Committee of Ten and of the Conferences cover much ground — nearly the whole field of secondary education — and are fundamental and far-reaching in their character. They relate to the selection of subjects for instruction with proper regard to their educational values; to the setting of due limits to these subjects through a discriminating choice of topics under each; to the best methods of instruction, and the best means of testing pupils' attainments; to necessary apparatus and appliances; to the most desirable allotment of time for each subject; to the correlation of studies in a way to promote the greatest economy of time and effort; to the most reasonable requirements and tests for admission to college; and finally, most important of all, to the means of procuring the greater supply of high teaching skill which the suggested enlargements and improvements of the course of instruction will inevitably demand.

They also reach below the secondary schools and suggest important changes which "are all in the direction of increasing simultaneously the interest and the substantial training quality of primary and grammar school studies." In order that "the minds of young children" may be "stored with some of the elementary facts and principles" of each subject, and that "all the mental habits which the adult student will surely need" may "begin to be formed in the child's mind before the age of fourteen," the elements of various subjects, hitherto usually reserved for high schools, are proposed for introduction into lower schools. The objection that people may feel "dismayed at the number and variety of the subjects to be opened to children of tender age" is met by the suggestion that "these different subjects should be correlated and associated one with another by the programme and by the actual teaching." Still more effectually, however, is this objection met by the detailed suggestions which each Conference makes concerning the choice of topics and the manner of dealing with these topics in the elementary schools.

Enough, perhaps, has now been said concerning the Report, to prove that its recommendations, together with the reasons given in support of them, constitute a body of matured expert opinion upon educational questions of the highest importance, by the bringing of which before public attention in an impressive manner the Committee of Ten has rendered a great public service. Doubtless the greatness of this service will be heartily recognized throughout the country.

This just recognition, however, does not mean that all the questions examined and passed upon by the hundred eminent experts are to be regarded henceforth as settled. The experts themselves do not expect this. Neither the Committee of Ten nor any one of the Conferences claims to have been set up as a final authority, or undertakes to promulgate *ex cathedra* fixed rules of educational faith and practice. The Report, on the contrary, is full of debatable matters, and plainly invites discussion. It goes further, and provides a definite basis of principles upon which discussion may best proceed with hope of reaching useful results. So it will probably be difficult for some time to come to discuss certain classes of educational questions without taking notice of what the Committee of Ten and the Conferences have said. By general consent already, it would seem, has the Report been accepted as a convenient standard of reference in discussion. Across the chart of our educational theory and practice there has been drawn, so to speak, a meridian line, by noting his departure from which one may easily define his educational position. In this respect, undoubtedly, the value of the Report will be admitted by those who are least inclined to accept its recommendations.

As a standard of reference or educational landmark, the Report of the Committee of Ten will be used in the following pages. For my belief is, that some good may result from a detailed comparison of the courses of instruction, methods of teaching, and standards of acquirement now familiar in our own schools with the ideal courses, methods,

and standards, suggested for the whole country by the Report. Assuming for the present, without discussion, that all its recommendations are sound and desirable, as well as feasible, we may be interested to inquire what changes would be requisite to place our own schools squarely upon the lines laid down in the Report. Accurate note being taken of such changes, our present educational position would become definitely known. Then would arise a series of questions relative to the several changes as to whether each one, in view of local conditions, were feasible and desirable. Such a course of inquiry extended over the whole field ought to prove interesting and fruitful.

The most striking difference between our present course and that formulated by the Committee of Ten is seen in the division of time between the high schools and the schools below. The total course being twelve years in length, say from the sixth to the eighteenth year of age, the Committee of Ten gives eight years to the primary and grammar grades and four years to the high schools; whereas, with an important exception to be mentioned presently, our course in Boston assigns nine years to the former and three years to the latter. The plan which gives eight grades below and four grades in the high school is probably the prevailing plan in the public schools of the United States. There is much to be said in favor of this plan. To adopt it in Boston would require the last year of the present grammar course to be handed over to the high schools. The question would be: Can all that is essential in our

present course of nine years (primary and grammar) be saved in a course of eight years; and, in this shortened course, can room be found for the new studies recommended? This question will be considered later in another connection. At present the important thing to bear in mind is, that all the enlargements and improvements of elementary courses suggested by the Committee of Ten have reference to an elementary period, not of nine but of only eight years' duration; and the feasibility of such suggestions should be estimated accordingly.

This consideration, it may be said, loses some of its importance in Boston, where the two public Latin schools, one for boys and one for girls, with their course of study extended over six years, afford precisely the opportunities the Committee of Ten desires to secure for the earlier beginning of "several subjects now reserved for high schools — such as algebra, geometry, natural science, and foreign languages." These two schools constitute the "important exception" above noted. The importance of this exception, however, is to be measured by the relative number of pupils affected by it.

The number of pupils in the Latin schools of Boston is limited, because only those children are admitted whose parents declare an intention of giving them a collegiate education. As the course of these schools is six years long, the parents' intention must be declared by the time the child is ten, eleven, or at most twelve years of age. Now there are many children concerning whom such intentions cannot be formed at so early an age. Their gifts and

capacities have not been manifested; nor do the studies in the present grammar school course give much occasion for such manifestations. Such children pass from the grammar into the ordinary high school with the expectation of finishing their education there; but before reaching the end, perhaps, experience an intellecutal awakening and exhibit such capacities and spirit as to demonstrate beyond question their innate fitness for a collegiate education. Such youth ought to be encouraged and helped to prepare themselves for college. It is for the public interest that the number of highly educated citizens be made as large as possible. Therefore ought the schools to afford all possible aid to the youth whose intellectual awakening has come late. Again, there are not a few children whose parents may have chosen the ordinary high school course from a prudent hesitancy about assuming the pecuniary burden of a collegiate education; but later would gladly reverse their decision, seeing their children have displayed extraordinary capacity and desire for higher learning.

With all such boys and girls the great difficulty has been that they were not on the direct road to college, and were already too far along another road to change without serious loss of time. *Hopelessly sidetracked* is the phrase that describes the situation of many a promising boy or girl approaching the end of the ordinary high school course, and then for the first time evincing a strong desire for a collegiate education.

What is the remedy for this inconvenient state of things? Obviously to open a direct road from the

ordinary high school course to college. Let there be not one road only, but two, three, or four roads to college. This means radical changes; but the way for them has already been prepared; and the end to be gained is believed by many to be highly desirable.

A long step towards this end was taken by Harvard College in accepting substitutes for Greek among the requisites for admission. Every year since that step was taken, graduates from the regular three years' course of the English High School, for instance, by spending one additional year in that school have prepared themselves easily for college and have entered Harvard, — in some instances with honors. It is to be hoped that all the other colleges may soon follow Harvard's lead in accepting substitutes for Greek among the requisites for admission. And this is virtually what the Committee of Ten recommends.

Another long step will be taken when cities and towns generally adopt one or more of the four courses of secondary instruction drawn up by the Committee of Ten and recommended to the country for general use. These four courses are believed to be good in themselves, since they afford excellent training for those pupils who will not go beyond the high school, and to be highly advantageous also as opening four distinct highways to college.

The third and last step will be the general adoption of the principle laid down by the Committee of Ten in the following words:

> In order that any successful graduate of a good secondary school should be free to present himself at the gates of the college

or scientific school of his choice, it is necessary that the colleges and scientific schools of the country should accept for admission to appropriate courses of their instruction the attainments of any youth who has passed creditably through a good secondary school course, no matter to what group of subjects he may have mainly devoted himself in the secondary school.

The four courses of secondary instruction which the Committee of Ten, with this principle in view, recommends are briefly described as follows:

(1.) THE CLASSICAL COURSE, providing for three foreign languages, Greek, Latin, and either French or German.

(2.) THE LATIN-SCIENTIFIC COURSE, providing for two foreign languages, Latin and either French or German.

(3.) THE MODERN LANGUAGE COURSE, providing for two foreign languages, French and German.

(4.) THE ENGLISH COURSE, providing for one foreign language, Latin, or French, or German.

All four courses make substantial provision for English, Mathematics, Physics, Chemistry, and History. Natural History is well provided for in all except the classical course. The length of each course is four years. (See pages 34, 35).

No one of these courses is regarded by the Committee of Ten as a cheap and easy way of getting into college; although such a view is apt to be taken concerning three of them by persons who deprecate the use of any other than the classical course in preparation for collegiate education.

This view, however, is met by the suggestion that no course should be accepted as a satisfactory prepa-

ation for college which cannot employ teachers the highest professional skill, and command all otl necessary means of instruction to the same extent the most favored course. Doubtless the classic course has been, heretofore, the most favored cours in these respects; but there is no reason why eac of the other courses should not deserve and obtain in due time, equal favor.

That two of the courses, "under existing conditions," cannot fairly be expected to prove equally satisfactory with the classical course, is distinctly admitted by the Committee of Ten in the following passage of their report:

> Although the committee thought it expedient to include among the four programmes one which included neither Latin nor Greek, and one which included only one foreign language (which might be either ancient or modern), they desired to affirm explicitly their unanimous opinion that, under existing conditions in the United States as to the training of teachers and the provision of necessary means of instruction, the two programmes called respectively Modern Languages and English must in practice be distinctly inferior to the other two.

This language suggests clearly the direction in which improvements of secondary education are needed. The colleges must send out teachers of science, of English language, and of history, no less well equipped for their work than are the teachers of Greek, of Latin, and of mathematics now sent out. And school committees must first be careful to appoint only such teachers, and then supply them with all means of instruction necessary to the use of the best methods.

A comparison of the four courses of secondary instruction recommended by the Committee of Ten with the existing courses of the secondary schools of Boston shows little difference in the range of subjects selected for study. The Committee of Ten's classical course and the course of Boston Latin school are practically the same. Small differences of detail may be left unnoticed. But there is one question that seems worthy of serious consideration. Might it not be well so to modify the Boston Latin School course as to make it cover one more of the Committee of Ten's courses, namely, the "Latin Scientific Course"? Or better, perhaps, might not a parallel course of foreign languages consisting of Latin, German, *and* French be introduced into our Latin schools, thus providing for some pupils an acceptable substitute for the omitted Greek? That some parents desire such an option is probably well known. But without arguing either of these questions here, let us return to the line of comparison above started.

Coming now to the non-classical high schools, we find that their list of subjects would require some additions to make it identical with that recommended by the Committee of Ten. The added subjects would be physical geography, geology or physiography, meteorology, astronomy, and trigonometry. Can these additional subjects be provided for in a three years' course? Certainly not. Indeed the three years' course is too short to make adequate provision for the subjects already there, if the standard

of acquirement in these subjects is to be brought up and kept up to the point of being acceptable for admission to college. Four years is probably the shortest time that can advantageously be allotted to a course of secondary instruction leading to college. So the question arises, How can a fourth year be added to the present three years' course?

There are two answers. One is that pupils having passed through the present three years' course may be permitted to continue a year longer in school as members of a post-graduate class. This is now done in two of the high schools — in the Girls' High, to prepare girls for admission to the Normal School, and in the English High, to prepare a considerable number of boys for admission to college without Greek. The other answer is, that pupils may be passed from the grammar into the high schools a year earlier than they are now. This would be done by providing for only eight grades below the high school instead of nine.

There is, however, a third alternative. For, if the Committee of Ten's recommendations relative to grammar school studies should be fully adopted, some important subjects heretofore usually reserved for the high schools would be begun in the grammar school course no less than five years before the end of that course as now laid out. With so much high school work transferred to the grammar schools, ought not three years to suffice for the rest of it, even though the grade of that remainder be a year in advance of the work now done?

Before answering this question, we need to examine the recommendations in detail, so as to form some opinion concerning the feasibility of making the important transfers suggested. These recommendations are eight in number, and may be stated in brief as follows:

(1.) That Latin be begun as early as the fifth year of school, — age of pupils ten and eleven years, — which would place it in the fifth class of the Boston grammar schools.

(2.) That German or French (elective) be begun as early as the fifth school year; and be given five lessons a week the first year, four the second, and not less than three the third and following years.

NOTE. — This, and the preceding recommendation, however, are to be taken with the limitation that no more than one foreign language is to be begun the same year.

(3.) That Concrete Geometry be begun as early as the fifth school, year and be given one lesson a week for four years.

(4.) That Algebra be studied in the last year of the grammar school course.

NOTE. — This recommendation is an inference. The Committee of Ten, assuming only *eight* grades below the high school, places formal algebra in the first year of the high school. But it seems fair to conclude from the committee's remarks about the study of arithmetic and its connection with algebra, that the latter study would have been given a place in a *nine* years' grammar course. The language used is this: "They [the Conference on Mathematics] recommend that the study of systematic algebra

should be begun at the age of fourteen [the assumed high school age]; but that, in connection with the study of arithmetic, the pupils should earlier be made familiar with algebraic expressions and symbols, including the method of solving simple equations."

(5.) That the study of "simple natural phenomena" by means of experiments be pursued in all grades from the lowest primary up, and that Elementary Physics by the laboratory method be studied in the upper grammar grades; the expressions used being "practice in the use of simple instruments for making physical measurements" and "experiments carried on by the pupils."

(6.) That "direct observational study" of plants and animals (botany and zoölogy without text-books) should "begin in the primary schools at the beginning of the school course," and continue to the extent of two lessons a week "throughout the whole course below the high school."

(7.) That History be begun as early as the fifth year of school, and include Biography and Mythology for the fifth and sixth years, American History and the elements of Civil Government for the seventh year, and Greek and Roman History "with their Oriental connections" for the eighth year.

NOTE. — What history would have been recommended for a ninth year in a grammar course (first class in the Boston grammar schools) is not easily inferred from the Report. Probably it would have been French, or English, or General European History.

(8.) That Physical Geography, including as an important particular Meteorology, be studied in the

eighth (and by inference in the ninth) year of school (second and first classes of the Boston grammar schools).

There are some trenchant recommendations touching the now usual grammar school studies which deserve a passing notice. Thus the opinion is expressed "that a radical change in the teaching of arithmetic [is] necessary;" and the recommendation is made "that the course in arithmetic be at once abridged and enriched; abridged by omitting entirely those subjects which perplex and exhaust the pupil without affording any really valuable mental discipline, and enriched by a greater number of exercises in simple calculation, and in the solution of concrete problems."[1] The course in arithmetic, thus "abridged and enriched," should, it is said, "begin about the age of six years, and be completed at the end of the grammar school course, say about the thirteenth year of age;" although "the Conference does not feel competent to decide how many hours a week should be devoted to it, and therefore leaves

[1] This recommendation possesses little importance in relation to the Boston public schools, where abridgment has already gone even farther than the Report suggests. It is worth remarking, in this connection, however, that if all the recommendations of the Mathematical Conference on other branches of mathematics be adopted, sundry topics — as cube root, proportion, mensuration, etc. — which have been expelled as arithmetic will be readmitted as algebra and geometry. To the child it will make no difference, whether he computes the contents of a sphere and calls his work applied arithmetic or concrete geometry; all he wants is to understand how to do it, and why he does it so. The old-fashioned arithmetic, which has, for the last thirty or forty years, been losing one after another its "enrichments," seems now to reappear in the guise of algebra and geometry demanding its ancient rights. And it may not be wholly unwelcome.

this question to teachers and other school authorities." Again, "spelling should be learned incidentally from every subject studied, and not from a spelling-book." Formal grammar should not be studied "earlier than the thirteenth year of the pupil's age;" and then "probably a single year (not more than three hours a week) will be sufficient." "Reading-books should be of a literary character, and should not attempt to teach physical science or natural history; they should make very sparing use of sentimental poetry." "At the beginning of the *seventh school year* the reading-book may be discarded, and the pupil should henceforth read literature, — prose and poetry in about equal parts. Complete works should usually be studied." All these and many more interesting matters fully set forth in the Report must be passed by without further notice here, for they would lead too far away from the present purpose, which is to consider the feasibility of the eight recommendations above stated.

These recommendations contain nothing new; nothing which has not for years been found in good private schools and academies; nothing which is not fairly within the grasp of children with ordinarily good mental powers. Time was when some of the studies now proposed to be added to the course were pursued in some of the grammar schools of Boston. That was in the days when each school had a course of its own — no two alike. But these schools have now for many years lived under a reign of uniformity — uniform studies, uniform books, uniform tests of

acquirement. Variations like those of former days are now unknown. They have disappeared in the same measure as the system of class grading has advanced towards perfection.

Uniformity is indeed the governing principle of graded school systems. According to it all children are to receive the same instruction and be held to the same standards of acquirement; all work prescribed for a grade must be done before advancement to the next grade can take place; all teachers must strive, not for the highest degree of scholarship in *some* members of their classes, but only for that moderate degree of scholarship in *all* members necessary for promotion to next grade. Consequently, all arrangements and all expectations must have regard to the "average child" — an imaginary being created for the use of the uniform graded system. This "average child" being provided for, all others must hasten or slacken their pace to keep in his company, and must content themselves with his opportunities. Eaglets and chickens and young ravens, all in the same yard, to be reared as "average" poultry.

Now this notion, possessing the minds of many, that uniformity is somehow indispensable to our graded school system, will make the introduction of the proposed new studies seem difficult or impossible. Does not the course, it will be asked, over-tax the strength of many children now? How, then, can it take on "all the ologies" besides? Where is the time for the new studies? And if there were time,

what is the use of them "to the average child"? Was not the present course evolved in the effort to secure the greatest good to the greatest number? Why should the many be obliged to struggle with the new subjects in order that the few may gain superior culture? If it taxes the best energies of teachers to make all their pupils "thorough" in the present studies, what can they do when a dozen new ones are added?

Underlying this and all similar reasoning is the idea that all children are to pursue all the studies laid down in the course and no others. The course is the same for all; and the whole host of children is to be marched over it with unbroken ranks. And certainly if this idea is to prevail, all hope of introducing the new studies must be abandoned, and further discussion of the recommendations is only a waste of time. For who does not remember that the children in our grammar schools manifest all degrees of intellectual capacity from the very highest down to the verge of idiocy? The attempt to teach them *all* either Latin, or German, or algebra is too absurd for serious consideration.

But in every grammar school there are some children who could be formed into separate classes to study some or all of the new subjects, with great advantage to themselves and no little pleasure to their teachers. There are schools, doubtless, in which the number of pupils so selected would be relatively small, and others in which it would be large; but probably there is no school in which some children able to

pursue the new studies could not be found, and no school in which all children should be required to pursue them.

Great interest, however, centres in those children who are able at an early age to do good work in the new studies. For such children alone, possibly, the recommendations were intended. The new studies, perhaps, were to be permitted to selected pupils able to pursue them, not required of all, able or unable. To some extent uniformity was to be sacrificed in the interest of individuality. However this may have been, there can be no doubt that some such limitation as is here suggested is the necessary condition of success in carrying the recommendations into practice.

The general conclusion, then, is that the eight recommendations touching grammar schools are feasible, provided the new studies be introduced permissively for children able to take them, and not as requirements for all. And the proposed improvements will be made all the more easily if, to some extent, the new studies take the places of old ones.

A further condition of practical success might be said to lie in the possibility of supplying the schools with teachers able to teach well the new subjects. But this matter need cause no serious anxiety. For there are already among our grammar school teachers many who have taken the certificate of ability to teach high school subjects, and no doubt many more will take it as soon as additional motives for doing so are brought to bear. Indeed, school boards have

only to create a demand for any kind or grade of teaching and pay it properly to procure presently an adequate supply. Young women well qualified to teach Latin, German, French, algebra, history, etc., are becoming more numerous year by year, thanks to the women's colleges. If the course in grammar schools should be enriched by the addition of such studies, it is quite likely that places in these schools would become more attractive to young women of high scholarship and teaching skill than they are now. At present the tendency among such teachers is decidedly to prefer places in the high schools.

Coming back now to the question whether our present course of three years in the high school with nine grades below should be replaced by a course of four years in the high school with eight grades below, we see that even such a change does not deliver the grammar schools from the proposed transfer to them of many of the so-called high school studies. For some of these are to begin as early as the fifth class. The question, therefore, is likely to turn on the way the new studies are to be treated in the grammar schools. If the new studies are introduced early in the course, and are well taught to considerable numbers of children continuously for several years, the question whether the children would better be transferred to the high school at the end of the eighth or of the ninth year of their school life may become merely a question of personal or local convenience. If, on the other hand, few or none of the new studies are to go into the grammar

school course, or if, going in, they are to go in late and be inadequately taught, then certainly ought the grammar school course to end with the eighth year of school, and the high school course ought to be made four years long by beginning it a year earlier than now.

But wholly aside from the question of introducing new studies, the opinion has long been held by some thoughtful observers of our schools that the present course of six years in the grammar schools is too long. Granting that some children cannot finish the course in less than seven or even eight years, it is believed, on the other hand, that very many more could finish it in five or even in four years than existing arrangements permit to do so. It seems probable that the present work covering six years could be laid out for five years without sacrificing any subjects of importance. Some go further and declare their belief that this could be done and still time enough could be had for the abler pupils to do some good work in the new studies. In support of this belief is cited the experience of certain towns near Boston where the new studies, or some of them, are said to have been successfully introduced into the grammar school course without seriously interfering with the older studies. If this be so, the proposal to shorten and at the same time to enrich the grammar school course would seem to be feasible.

There remains the question whether the proposed changes are desirable. But before considering this, it will be convenient to gather from the foregoing

pages a concise and accurate statement of what the changes would need to be in the Boston schools.

These are:

(1.) A regrading of the classes in such a way as to give eight years (or grades) below the high schools and four years (or grades) in the high schools, not including the "Advanced Class" in the Girls' High and English High Schools.

(2.) A recasting of the high school courses of study in such form that all subjects included in the Committee of Ten's "Modern Language Course" and "English Course" may be taught to the extent of qualifying pupils for admission to any higher institution that accepts either course as a satisfactory preparation. (See p. 35.)

(3.) A recasting either of the Latin school or of the high school course in such form as to include the Committee of Ten's "Latin Scientific Course." (See p. 34.)

(4.) A revision of the distribution of time amongst the main lines of study — foreign language, English, mathematics, history, and science — in the high schools so as to correct the undue preponderance now given to one line or another in certain years of the present course.[1]

(5.) A transfer to the grammar schools of a considerable amount of work hitherto usually done in the high schools — this amount to be greater if the grammar school course be not shortened, and less

[1] For instance, the placing of both physics and chemistry in the same year, as is now done, would seem to be giving undue preponderance to science in that year.

if it be shortened, but in either case enough to enable pupils to finish any of the proposed high school courses by the end of their twelfth year of school life.

(6.) A provision for the study of Latin in the grammar schools as early as the present fifth class.

(7.) A provision for the study of either French or German (elective) in the grammar schools as early as the present fifth class.

(8.) A provision for the study of concrete geometry in the grammar schools as early as the fifth class.

(9.) A provision for the study of formal algebra in the grammar schools (if the course be not shortened) as early as the present first class, and a provision for still earlier study of algebraic symbols, expressions, and processes so far as to include the solution of simple equations.

(10.) A reconstruction of the whole line of work in geography, physical science, and natural history in such a way as to necessitate the most improved methods of teaching and far more abundant supplies of illustrative material than are now given.

(11.) A re-introduction into the grammar schools of physical geography, at least the elementary parts of the subject, including particularly meteorology.

(12.) A provision for the study of Greek and Roman history in the grammar schools; and, if the course be not shortened, for a year's study of English or other European history.

Returning now to the main question we may ask in perfectly definite form: Are these twelve changes or any of them desirable in the Boston schools? To this question I am ready to return a general answer in the affirmative, provided certain preliminary questions can be settled in a way to make the introduction of the new studies feasible. One such question, whether all or only some of the pupils in the grammar school shall study Latin, algebra, French, or geometry has been suggested already. Another would be the question whether there shall be elective studies in high schools to a much greater extent than is now permitted. Still another, whether pupils of all degrees of ability are to be held, theoretically at least, to the same course and the same standards, or whether differences in ability are to be frankly recognized by organizing the abler pupils in classes apart and giving them more and higher work to do than is given to the less able pupils. And various other questions of similar nature could be suggested as likely to arise the moment it is attempted to put any of the twelve changes into practical operation.

It is not my purpose, however, to enter upon the discussion of this class of questions now, further than to say that they do not appear to be so seriously difficult as to forbid favorable consideration of the proposed changes. They are questions of a sort to be dealt with by the Board of Supervisors, should the School Committee, upon consideration of the main question, see fit to adopt any of the changes.

An important matter to be considered in its bearing on the main question is the attitude of the principals of schools. What their opinions may be cannot now be answered; but an answer is in process of formation. At the masters' monthly meetings the standing subject for discussion since September has been "The Enrichment of the Grammar School Course." Interesting statements concerning experiments now going on in neighboring towns have been made before the meetings by persons engaged in making them or otherwise familiar with them. At the last meeting the masters and many teachers besides listened to an address by the Chairman of the Committee of Ten, President Eliot, of Harvard University. Next may be expected a thorough discussion of the whole matter by the masters themselves. But when a conclusion may be expected or what that conclusion is likely to be is not for me now to say. Whatever the outcome, certainly the time spent in the discussion has not been spent in vain. Should the proposed changes be ordered, the way for them will have been to some extent already prepared; and, if they should not be ordered, opinions may have been formed which will lead to such action later. Or, on the other hand, if opinions should finally turn out to be unfavorable to the proposed changes, the discussions will at least have awakened interest in the general question of "educational values."

In closing this report I may say that the chief part of it has been devoted to a consideration of the Re-

port of the Committee of Ten, because in that way could be brought up for discussion and possibly for settlement, so far as our own schools are concerned, the many important questions which that celebrated document has brought to public attention throughout the country.

Respectfully submitted,

EDWIN P. SEAVER,

Superintendent of Public Schools.

MARCH, 1894.

*** At this point are inserted, for convenience of reference, the four courses of secondary instruction recommended by the Committee of Ten. The letter *p* denotes "recitation period" or "lesson," assumed to be of about 45 minutes' duration. Each course provides for twenty of these recitation periods, or lessons a week. Drawing, physical training, and music are not necessarily excluded; for, if $p=45$ minutes, $20p=15$ hours; so there remains no less than 10 hours a week of unappropriated time for these and other matters.

Year.	Classical Course. Three foreign languages (one modern).		Latin Scientific Course. Two foreign languages (one modern).	
I.	Latin	5 p.	Latin	5 p.
	English	4 p.	English	4 p.
	Algebra	4 p.	Algebra	4 p.
	History	4 p.	History	4 p.
	Physical Geography	3 p.	Physical Geography	3 p.
		20 p.		20 p.
II.	Latin	5 p.	Latin	5 p.
	English	2 p.	English	2 p.
	* German [*or* French] begun	4 p.	German [*or* French] begun	4 p.
	Geometry	3 p.	Geometry	3 p.
	Physics	3 p.	Physics	3 p.
	History	3 p.	Botany or Zoölogy	3 p.
		20 p.		20 p.
III.	Latin	4 p.	Latin	4 p.
	* Greek	5 p.	English	3 p.
	English	3 p.	German [*or* French]	4 p.
	German [*or* French]	4 p.	Mathematics { Algebra 2, Geometry 2 }	4 p.
	Mathematics { Algebra 2, Geometry 2 }	4 p.	Astronomy ½ yr. & Meteorology ½ yr.	3 p.
		20 p.	History	2 p.
				20 p.
IV.	Latin	4 p.	Latin	4 p.
	Greek	5 p.	English { as in Classical 2, additional 2 }	4 p.
	English	2 p.	German [*or* French]	3 p.
	German [*or* French]	3 p.	Chemistry	3 p.
	Chemistry	3 p.	Trigonometry & Higher Algebra *or* History	3 p.
	Trigonometry & Higher Algebra *or* History	3 p.	Geology or Physiography ½ yr. and Anatomy, Physiology, & Hygiene ½ yr.	3 p.
		20 p.		20 p.

*In any school in which Greek can be better taught than a modern language, or in which local public opinion or the history of the school makes it desirable to teach Greek in an ample way, Greek may be substituted for German or French in the second year of the classical programme.

Year.	Modern Language Course. Two foreign languages (both modern).		English Courses. One foreign language (ancient or modern).	
I.	French [*or* German] begun	5 p.	Latin, or German, or French	5 p.
	English	4 p.	English	4 p.
	Algebra	4 p.	Algebra	4 p.
	History	4 p.	History	4 p.
	Physical Geography	3 p.	Physical Geography	3 p.
		20 p.		20 p.
II.	French [*or* German]	4 p.	Latin, or German, or French	5 or 4 p.
	English	2 p.	English	3 or 4 p.
	German [*or* French] begun	5 p.	Geometry	3 p.
	Geometry	3 p.	Physics	3 p.
	Physics	3 p.	History	3 p.
	Botany or Zoölogy	3 p.	Botany or Zoölogy	3 p.
		20 p.		20 p.
III.	French [*or* German]	4 p.	Latin, or German, or French	4 p.
	English	3 p.	English { as in others 3, additional 2 }	5 p.
	German [*or* French]	4 p.		
	Mathematics { Algebra 2, Geometry 2 }	4 p.	Mathematics { Algebra 2, Geometry 2 }	4 p.
	Astronomy ½ yr. & Meteorology ½ yr.	3 p.	Astronomy ½ yr. & Meteorology ½ yr.	3 p.
	History	2 p.	History { as in the Latin-Scientific 2, additional 2 }	4 p.
		20 p.		20 p.
IV.	French [*or* German]	3 p.	Latin, or German, or French	4 p.
	English { as in Classical 2, additional 2 }	4 p.	English { as in Classical 2, additional 2 }	4 p.
	German [*or* French]	4 p.	Chemistry	3 p.
	Chemistry	3 p.	Trigonometry & Higher Algebra	3 p.
	Trigonometry & Higher Algebra 3 *or* History	3 p.	History	3 p.
	Geology or Physiography ½ yr. and Anatomy, Physiology, & Hygiene ½ yr.	3 p.	Geology or Physiography ½ yr. and Anatomy, Physiology, & Hygiene ½ yr.	3 p.
		20 p.		20 p.

STATISTICS

FOR THE

HALF-YEAR ENDING JAN. 31, 1894.

SUMMARY.

January 31, 1894.

General Schools.	No. Schools.	No. of Teachers.	Average No. Pupils Belonging.	Average Attendance.	Average Absence.	Per cent. of Attendance.	No. at date.
Normal	1	11	191	184	7	96.3	191
Latin and High	11	130	3,701	3,516	185	95.0	3,675
Grammar	55	764	32,700	29,881	2,819	91.4	32,681
Primary	489	489	26,141	22,649	3,492	86.6	26,523
Kindergartens	45	81	2,411	1,753	658	72.7	2,518
Totals	601	1,475	65,144	57,983	7,161	89.0	65,588

Special Schools.	No. Schools.	No. of Teachers.	Average No. Pupils Belonging.	Average Attendance.	Average Absence.	Per cent. of Attendance.	No. at date.
Horace Mann	1	12	96	83	13	85	110
Spectacle Island	1	1	16	13	3	81	20
Evening High	1	33	2,041	1,505	....	....	....
Evening Elementary	15	151	3,566	2,219	....	....	....
Evening Drawing	5	27	632	557	....	....	....
Totals	23	224	6,351	4,377	....	....	....

REGULAR TEACHERS.

Schools.	Teachers.		
	Males.	Females.	Total.
Normal School	2	7	9
Latin School	17	.....	17
Girls' Latin School	1	7	8
English High School	23	.....	23
Girls' High School	2	20	22
Roxbury High School	3	11	14
Dorchester High School	2	6	8
Charlestown High School	2	5	7
West Roxbury High School	2	3	5
Brighton High School	1	3	4
East Boston High School	2	3	5
Mechanic Arts High	6	.....	6
Grammar Schools	108	592	700
Primary Schools	.....	489	489
Kindergartens	.....	81	81
Totals	171	1,227	1,398

SPECIAL TEACHERS.

Schools.	Males.	Females.	Total.
Horace Mann School		12	12
Evening Schools	72	112	184
Evening Drawing Schools	22	5	27
French and German: High Schools	3		3
Music: High, Grammar, and Primary Schools	5	4	9
Kindergarten Methods: Normal School		2	2
Drawing: High and Grammar Schools	2		2
Physical Training	2		2
Sewing		31	31
Chemistry: Girls' High School		1	1
Laboratory Assistant: Girls' High School	1	1	2
Vocal and Physical Culture: Girls' High School		1	1
Vocal and Physical Culture: Girls' Latin School		1	1
Military Drill: High Schools	1		1
Manual Training Schools	3	9	12
Cooking Schools		10	10
Spectacle Island	1		1
Totals	112	189	301

NORMAL AND HIGH SCHOOLS.

Semi-Annual Returns to January 31, 1894.

Schools.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Head-Masters.	Masters.	Junior-Masters.	Sub-Masters.	Asst. Principals.	First Assistants.	Second Asts.	Assistants.	Instructors.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.											
Normal		191	191		184	184	7	96	1	1		1		2	5		
Latin	540		540	522		522	18	97	1	9	7						
Girls' Latin		220	220		207	207	13	94		1						7	
English High	724		724	693		693	31	96	1	7	15						
Girls' High		745	745		700	700	45	94	1	1		1	1			18	
Roxbury High	178	335	513	171	318	489	24	95	1	1	1					11	
Dorchester High	79	152	231	75	141	216	15	94		1	1					6	
Charlestown High	47	137	184	45	127	172	12	93	1		1					5	
West Roxbury High	43	87	130	41	80	121	9	93		1	1					3	
Brighton High	36	59	95	35	56	91	4	96		1						3	
East Boston High	36	80	116	33	76	109	7	94		1	1					3	
Mechanic Arts High	203		203	196		196	7	97	1		2						3
Totals	1,886	2,006	3,892	1,811	1,889	3,700	192	95.1	7	23	29	1	1	2	5	56	3

NORMAL, LATIN, AND HIGH SCHOOLS, CLASSIFICATIONS AND AGES, JANUARY 31, 1894.

Schools.	First-year class.	Second-year class.	Third-year class.	Fourth-year class.	Fifth-year class.	Sixth-year class.	Out-of-course class.	Whole number at date.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.	19 years.	20 years.	21 years and over.
Normal	67	70	54	...	...	...	...	191	...	...	...	...	...	...	2	18	38	48	85
Latin	130	67	103	79	55	35	124	593	13	35	68	111	149	99	70	29	13	4	2
Girls' Latin	32	38	51	34	24	13	25	217	2	10	36	33	35	42	33	14	9	3	...
English High	238	246	173	61	...	...	...	718	...	...	13	61	142	198	171	97	25	9	2
Girls' High	353	151	132	80	...	...	...	716	...	...	3	48	145	202	142	107	45	20	4
Roxbury High	194	157	125	32	...	...	...	508	...	...	10	29	86	148	138	82	14	1	...
Dorchester High	81	75	59	13	...	...	...	228	...	...	1	20	48	60	61	26	10	1	1
Charlestown High	77	36	46	16	...	...	...	175	...	...	1	13	40	52	32	25	8	4	...
West Roxbury High	40	52	34	...	...	...	...	126	...	1	1	10	14	47	29	22	2	...	...
Brighton High	47	25	21	...	...	...	...	93	...	...	2	9	28	27	14	11	2	...	...
East Boston High	39	39	34	...	...	...	...	112	...	...	2	8	13	38	25	19	7	...	...
Mechanic Arts High	189	...	...	...	...	...	...	189	...	...	...	8	44	72	43	16	6	...	...
Totals	1,487	956	832	315	79	48	149	3,866	15	46	137	350	744	985	760	466	179	90	94

NORMAL AND HIGH SCHOOLS.

Number of Pupils to a Teacher, exluding Principals, January 31, 1894.

Schools.	No. of Reg. Teachers.	Average No. of Pupils.	Average No. of Pupils to a Regular Teacher.
Normal	8	191	23.9
Latin	16	540	33.8
Girls' Latin	7	220	31.4
English High	22	724	32.9
Girls' High	21	745	35.5
Roxbury High	13	513	39.5
Dorchester High	7	231	33.0
Charlestown High	6	184	30.7
West Roxbury High	4	130	32.5
Brighton High	3	95	31.7
East Boston High	4	116	29.0
Mechanic Arts High	5	203	40.6
Totals	116	3,892	33.6

ADMISSIONS, SEPTEMBER, 1893.

NORMAL SCHOOL.

Schools.	Number Admitted.	Average Age.	
		Years.	Months.
Girls' High School	48	19	6
Roxbury High School	5	19	8
From other sources	21	19	6
Totals	74	19	6

High School Graduates, Fourth-year class, June, 1893, Boys, 5; Girls, 75.

LATIN AND HIGH SCHOOLS.

Schools.	Admitted.		From Grammar Schools.	From other Sources.	Totals.	Average Age.	
	Boys.	Girls.				Years.	Mos.
Latin	259	.....	221	38	259	14	6
Girls' Latin	.....	76	62	14	76	14	9
English High	262	.....	230	32	262	15	4
Girls' High	.....	405	371	34	405	15	7
Roxbury High	66	132	176	22	198	15	4
Dorchester High	17	71	69	19	88	15	8
Charlestown High	23	65	83	5	88	15	5
West Roxbury High,	14	34	39	9	48	15	6
Brighton High	24	28	46	6	52	15	2
East Boston High	13	30	38	5	43	15	6
Mechanic Arts High,	228	.....	227	1	228	16	2
Totals	*906*	*841*	1,562	185	1,747		

GRAMMAR SCHOOLS.

Semi-Annual Returns to January 31, 1894.

Schools.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Sub-Masters.	1st Assistants.	2d Assistants.	3d Assistants.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.							
Adams	198	186	384	182	171	353	31	92	1	1	1	1	6
Agassiz	485	...	485	452	...	452	33	93	1	1	1	1	7
Bennett	254	244	498	243	231	474	24	95	1	2	1	.	7
Bigelow	740	...	740	689	...	689	51	93	1	2	1	2	9
Bowditch	...	470	470	...	433	433	37	92	1	.	2	1	6
Bowdoin	...	404	404	...	356	356	48	88	1	.	2	1	7
Brimmer	592	...	592	526	...	526	66	89	1	2	1	1	8
Bunker Hill	239	233	472	216	213	429	43	91	1	1	2	2	8
Chapman	345	314	659	315	287	602	57	91	1	1	2	2	7
Charles Sumner	383	354	737	359	328	687	50	93	1	1	2	2	8
Comins	276	287	563	255	261	516	47	92	1	1	2	1	6
Dearborn	388	261	649	357	235	592	57	91	1	1	2	1	9
Dillaway	...	667	667	...	596	596	71	89	1	.	2	3	7
Dudley	677	...	677	...	630	630	47	93	1	2	1	1	9
Dwight	662	...	662	...	606	606	56	92	1	2	1	1	9
Edward Everett	315	348	663	290	315	605	58	91	1	1	2	2	6
Eliot	1,004	...	1,004	897	...	897	107	89	1	3	1	1	16
Emerson	396	351	747	359	321	680	67	91	1	1	2	2	10
Everett	...	730	730	...	653	653	77	89	1	.	2	3	9
Franklin	...	688	688	...	618	618	70	89	1	.	2	3	8
Frothingham	303	345	648	278	308	586	62	90	1	1	2	2	7
Gaston	...	766	766	...	695	695	71	91	1	.	2	2	9
George Putnam	168	205	373	157	186	343	30	92	1	1	1	.	5
Gibson	206	214	420	193	194	387	33	92	1	1	1	1	5
Hancock	...	737	737	...	660	660	77	90	1	.	2	2	11
Harris	184	181	365	170	165	335	30	92	1	.	2	.	6
Harvard	312	346	658	292	320	612	46	93	1	1	2	2	7

GRAMMAR SCHOOLS. — *Concluded.*

Schools.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Sub-Masters.	1st Assistants.	2d Assistants.	3d Assistants.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.							
Henry L. Pierce	356	333	689	335	303	638	51	93	1	1	2	2	8
Hugh O'Brien	460	326	786	431	304	735	51	94	1	1	2	2	9
Hyde		654	654		593	593	61	91	1		2	2	8
John A. Andrew	371	362	733	349	332	681	52	93	1	1	2	2	10
Lawrence	737		737	708		708	29	96	1	3	1	1	10
Lewis	351	393	744	329	360	689	55	93	1	1	2	2	9
Lincoln	597		597	544		544	53	91	1	2	1	1	7
Lowell	409	401	810	374	363	737	73	91	1	1	2	2	10
Lyman	334	177	511	312	165	477	34	93	1	1	2	2	6
Martin	195	162	357	180	147	327	30	92	1	1	1	2	4
Mather	377	345	722	344	306	650	72	90	1	1	2	2	9
Minot	160	157	317	151	144	295	22	93	1		1	1	5
Norcross		619	619		565	565	54	91	1		2	3	9
Phillips	899		899	811		811	88	90	1	3	1	1	12
Prescott	231	215	446	213	193	406	40	91	1	1	1	1	6
Prince	204	297	501	198	270	468	43	91	1	1	1	1	7
Quincy	540		540	469		469	71	87	1	2	1	1	7
Rice	481		481	437		437	44	91	1	2	1	6	2
Robert G. Shaw	141	131	272	133	121	254	18	93		1	1	1	5
Sherwin	559		559	515		515	44	92	1	2	1	1	7
Shurtleff		657	657		581	581	76	88	1		2	3	8
Stoughton	119	166	285	111	152	263	22	92	1		1		5
Thomas N. Hart	463		463	434		434	29	94	1	1	1	1	6
Tileston	60	73	133	56	67	123	10	93		1			3
Warren	337	338	675	316	317	633	42	94	1	1	3	2	7
Washington Allston	384	427	811	354	390	744	67	92	1	1	2	2	9
Wells		574	574		507	507	67	88	1		2	1	9
Winthrop		670	670		595	595	75	89	1		2	4	8
Totals	16,892	15,808	32,700	14,324	15,557	29,881	2,819	91.4	53	55	86	89	417

GRAMMAR SCHOOLS.

Number of Pupils in each Class, Whole Number, and Ages, January 31, 1894.

Schools.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Ungraded Class.	Whole number.	Under eight years.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years.	Fourteen years.	Fifteen years.	Sixteen years.	Seventeen years.	Eighteen years and over.
Adams	25	40	43	89	98	57	33	385	. . .	10	26	53	62	67	81	55	24	6	1	. . .
Agassiz	38	51	56	120	115	119	. . .	499	. . .	10	37	74	71	93	84	58	46	24	1	1
Bennett	80	53	72	91	96	94	. . .	486	. . .	8	26	65	73	86	81	85	48	12	2	. . .
Bigelow	55	112	110	166	131	168	. . .	742	. . .	11	49	106	116	146	152	106	39	12	4	1
Bowditch	37	47	99	116	106	61	. . .	466	1	9	37	70	74	73	96	56	33	13	3	1
Bowdoin	36	37	75	40	84	96	37	405	. . .	8	29	52	47	74	72	54	46	16	7	. . .
Brimmer	36	95	89	102	99	138	40	599	. . .	13	49	76	105	107	117	77	38	12	4	1
Bunker Hill	47	57	68	79	99	101	20	471	. . .	12	36	69	64	92	83	69	30	9	7	. . .
Chapman	53	93	132	152	126	116	. . .	671	3	13	62	90	97	121	93	92	56	33	10	1
Charles Sumner	84	81	107	143	155	165	. . .	735	1	19	67	123	130	118	116	93	40	21	7	. . .
Comins	48	81	87	104	135	112	. . .	567	1	14	55	76	105	112	96	70	29	5	4	. . .
Dearborn	41	79	96	97	153	179	. . .	645	1	9	27	83	104	142	133	91	40	12	3	. . .
Dillaway	64	91	108	114	134	150	. . .	661	1	17	52	91	104	128	94	90	55	22	6	1
Dudley	48	99	102	108	146	141	36	680	. . .	8	42	97	110	131	112	85	65	25	4	1
Dwight	51	100	105	151	110	110	33	660	. . .	20	43	94	108	95	124	89	61	22	4	. . .
Edward Everett	61	95	112	137	143	123	. . .	671	. . .	16	63	77	91	105	96	99	71	39	11	3
Eliot	44	58	86	105	165	211	336	1,005	21	28	78	128	137	181	200	156	66	9	1	. . .
Emerson	48	87	87	143	179	168	31	743	. . .	6	44	108	124	128	132	109	65	22	4	1
Everett	81	102	113	161	114	121	32	724	. . .	21	56	100	113	105	143	101	49	25	8	3
Franklin	40	100	106	102	166	118	43	675	. . .	5	55	107	94	130	118	77	57	23	8	1
Frothingham	44	80	86	111	144	144	41	650	. . .	16	62	85	91	121	126	94	43	11	1	. . .
Gaston	47	101	111	162	150	192	. . .	763	. . .	19	60	101	128	128	131	90	60	29	8	. . .
George Putnam	24	46	54	56	82	116	. . .	378	. . .	3	32	47	68	65	73	53	21	11	2	3
Gibson	43	53	57	79	91	89	. . .	412	2	16	37	59	70	74	57	43	35	18	. . .	1

Hancock	35	37	50	102	100	172	223	726	. . .	20	64	97	150	133	132	73	40	14	3	. . .
Harris	42	47	60	62	72	79	. . .	362	. . .	5	23	43	39	85	61	55	32	10	3	. . .
Harvard	47	52	94	102	153	165	36	649	1	12	49	93	105	109	140	83	35	18	3	1
Henry L. Pierce	86	90	106	134	149	134	. . .	699	. . .	22	46	105	121	115	104	93	51	35	7	. . .
Hugh O'Brien	76	100	115	137	180	187	. . .	795	. . .	14	66	111	96	130	131	114	81	37	12	3
Hyde	56	87	104	110	156	94	31	638	. . .	13	65	76	104	110	112	92	46	10	7	3
John A. Andrew	43	56	100	157	168	166	49	739	. . .	9	72	104	140	136	129	90	45	12	2	. . .
Lawrence	91	88	90	125	151	145	35	725	. . .	9	62	109	142	139	129	97	32	6	. . .	. . .
Lewis	101	102	108	161	134	145	. . .	751	. . .	14	48	100	111	146	119	99	72	32	8	2
Lincoln	46	45	92	106	116	150	33	588	. . .	15	68	86	111	103	84	65	37	19	. . .	. . .
Lowell	59	96	118	182	166	181	. . .	802	. . .	23	88	116	151	138	147	81	38	16	3	1
Lyman	42	56	70	106	104	143	. . .	521	. . .	5	25	62	95	111	100	86	33	4	. . .	. . .
Martin	38	55	49	85	81	46	. . .	354	. . .	6	34	45	46	59	79	47	28	9	1	. . .
Mather	75	81	107	110	152	166	25	716	. . .	15	60	94	124	124	111	101	58	26	3	. . .
Minot	23	36	63	54	67	70	. . .	313	. . .	2	22	37	56	62	51	48	29	6	. . .	. . .
Norcross	39	79	85	110	144	166	. . .	623	. . .	10	41	107	115	112	128	65	38	6	1	. . .
Phillips	49	54	154	169	166	166	147	905	. . .	14	69	142	166	151	151	117	69	19	4	3
Prescott	53	50	72	89	104	95	. . .	463	2	4	37	57	94	66	92	55	39	15	1	1
Prince	76	77	79	110	73	101	. . .	516	. . .	2	42	67	81	87	78	79	44	21	13	2
Quincy	39	49	84	89	101	109	61	532	. . .	4	20	50	76	130	124	80	33	13	1	1
Rice	42	53	85	81	103	98	23	485	. . .	5	35	61	85	93	101	53	41	11	. . .	. . .
Robert G. Shaw	29	39	40	59	48	56	. . .	271	. . .	9	36	32	46	46	39	29	25	7	2	. . .
Sherwin	46	54	98	113	106	106	32	555	. . .	3	43	69	97	92	106	77	44	15	8	1
Shurtleff	59	55	93	222	113	107	. . .	649	. . .	13	57	70	118	110	121	91	45	18	5	1
Stoughton	32	42	48	58	51	60	. . .	291	. . .	2	24	36	53	57	49	41	22	4	2	1
Thomas N. Hart	35	49	88	100	84	102	. . .	458	. . .	15	34	63	77	103	77	57	20	12	. . .	. . .
Tileston	11	20	30	20	21	33	. . .	135	. . .	3	8	17	31	16	26	24	6	2	2	. . .
Warren	53	78	89	144	116	164	38	682	. . .	15	71	99	100	120	107	78	55	27	7	3
Washington Allston	56	126	140	159	154	146	30	811	1	24	91	112	127	142	136		49	17	. . .	1
Wells	33	44	48	106	112	109	126	578	. . .	21	40	112	112	96	91	74	25	7	. . .	. . .
Winthrop	64	93	97	95	156	151	. . .	656	. . .	10	42	86	122	108	129	90	40	22	7	. . .
Totals	2,749	3,828	4,817	6,185	6,631	6,900	1,571	32,681	35	649	2,615	4,489	5,397	5,831	5,800	4,337	2,369	901	215	43

DISTRIBUTION OF PUPILS IN RESPECT BOTH

	CLASSES.		Under 4 years.	4 years.	5 years.	6 years.	7 years.	8 years.	9 years.
Latin Schools.	All Classes	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Totals		. .	. .	. .	. .	. .	. .	. .
High Schools.	Advanced Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Third-year Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Second-year Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	First-year Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Totals		. .	. .	. .	. .	. .	. .	. .
Grammar Schools.	First Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Second Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Third Class	Boys	. .	. .	. .	. .	. .	1	. .
		Girls	. .	. .	. .	. .	. .	. .	1
	Fourth Class	Boys	. .	. .	. .	. .	. .	1	24
		Girls	. .	. .	. .	. .	. .	3	36
	Fifth Class	Boys	. .	. .	. .	. .	. .	16	245
		Girls	. .	. .	. .	. .	1	21	284
	Sixth Class	Boys	. .	. .	. .	. .	3	258	966
		Girls	. .	. .	. .	. .	10	291	894
	Ungraded Class	Boys	. .	. .	. .	. .	21	30	97
		Girls	. .	. .	. .	. .	. .	28	68
	Totals		. .	. .	. .	. .	35	649	2,615
Primary Schools.	First Class	Boys	. .	. .	. .	11	305	1,197	1,117
		Girls	. .	. .	. .	15	376	1,096	1,033
	Second Class	Boys	. .	. .	7	515	1,563	1,316	616
		Girls	. .	. .	7	530	1,387	1,088	465
	Third Class	Boys	. .	26	1,753	2,567	1,276	458	137
		Girls	. .	20	1,438	2,060	1,169	440	90
	Totals		. .	46	3,205	5,698	6,076	5,595	3,458
Kinder-gartens.	All Classes	Boys	137	610	442	57	1	. .	. .
		Girls	180	569	451	66	5	. .	. .
	Totals		317	1,179	893	123	6	. .	. .
	als by Ages		317	1,225	4,098	5,821	6,117	6,244	6,073

TO AGE AND TO CLASSES, JANUARY 31, 1894.

10 years.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.	19 years and over.	Totals by Classes.
. .	13	35	68	111	149	99	70	29	19	593
. .	2	10	36	33	35	42	33	14	12	217
. .	15	45	104	144	184	141	103	43	31	810
. .	. .	. .	. .	. .	1	7	16	34	21	79
. .	. .	. .	. .	. .	. .	2	21	46	54	123
. .	. .	. .	. .	. .	9	67	114	81	15	286
. .	. .	. .	. .	. .	2	68	124	104	40	338
. .	. .	. .	. .	11	72	139	114	35	8	379
. .	. .	. .	. .	11	68	150	108	53	12	402
. .	. .	1	22	91	185	170	81	21	7	578
. .	. .	. .	11	93	223	241	77	31	4	680
. .	. .	1	33	206	560	844	655	405	161	2,865
. .	2	38	192	449	373	199	40	8	. .	1,301
. .	. .	20	165	399	488	273	89	14	. .	1,448
. .	32	215	527	605	367	104	23	4	. .	1,877
1	22	174	539	620	398	152	34	11	. .	1,951
27	222	645	793	529	226	51	4	2	. .	2,500
15	222	573	743	502	191	53	15	2	. .	2,317
243	737	919	751	391	103	22	. .	. .	. .	3,191
260	702	905	681	297	89	15	6	. .	. .	2,994
804	940	697	479	197	44	22	1	. .	. .	3,445
795	882	657	379	126	33	7	. .	1	. .	3,186
1,073	731	365	170	74	18	2	. .	. .	. .	3,660
963	589	300	135	45	12	. .	1	. .	. .	3,240
167	180	205	154	77	22	1	1	1	. .	956
141	136	118	92	26	5	. .	1	. .	. .	615
4,489	5,397	5,831	5,800	4,337	2,369	901	215	43	. .	32,681
624	204	82	20	. .	. .	. .	. .	. .	. .	3,560
517	207	79	44	. .	. .	. .	. .	. .	. .	3,367
220	69	18	. .	. .	. .	. .	. .	. .	. .	4,324
168	51	15	6	. .	. .	. .	. .	. .	. .	3,717
35	10	5	2	. .	. .	. .	. .	. .	. .	6,269
47	12	5	5	. .	. .	. .	. .	. .	. .	5,286
1,611	553	204	77	. .	. .	. .	. .	. .	. .	26,523
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1,247
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1,271
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2,518

PRIMARY SCHOOLS.

Semi-annual Returns, to January 31, 1894.

Districts.	Teachers.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 years.	Over 8 years.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Adams	5	154	146	300	139	125	264	36	88	178	122	30
Agassiz	4	133	87	220	121	74	195	25	89	124	107	23
Bennett	7	196	183	379	176	159	335	44	88	227	157	38
Bigelow	13	346	289	635	295	234	529	106	83	340	289	62
Bowditch	10	276	263	539	239	227	466	73	86	321	231	552
Bowdoin	8	191	186	377	160	154	314	63	83	247	148	395
Brimmer	7	203	145	348	177	123	300	48	86	200	156	356
Bunker Hill	10	221	164	385	199	142	341	44	89	220	182	402
Chapman	6	177	156	333	155	136	291	42	87	210	130	340
Charles Sumner	11	315	281	596	273	241	514	82	86	363	226	589
Comins	6	143	125	268	123	106	229	39	85	144	129	273
Dearborn	14	438	332	770	384	284	668	102	87	415	389	804
Dillaway	9	240	237	477	213	204	417	60	87	286	182	468
Dudley	12	348	304	652	298	252	550	102	84	357	310	667
Dwight	10	276	279	555	242	240	482	73	87	333	221	554
Edward Everett	9	249	250	499	221	215	436	63	87	302	204	506
Eliot	9	308	190	498	266	166	432	66	87	280	173	453
Emerson	11	294	290	584	265	255	520	64	89	324	292	616
Everett	10	270	300	570	236	244	480	90	84	279	311	590
Franklin	12	315	309	624	276	263	539	85	86	358	279	637
Frothingham	9	254	227	481	229	201	430	51	89	329	164	493
Gaston	8	215	248	463	187	213	400	63	86	244	194	438
George Putnam	6	162	150	312	144	129	273	39	88	174	142	316
Gibson	6	170	156	326	148	132	280	46	86	233	138	371
Hancock	18	506	552	1,058	445	479	924	134	87	631	429	1,060
Harris	6	161	130	291	139	110	249	42	86	149	149	298
Harvard	11	307	287	594	272	252	524	70	88	336	263	599
Henry L. Pierce	7	185	175	360	160	150	310	50	86	198	171	369

PRIMARY SCHOOLS. — *Concluded.*

Districts.	Teachers.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 years.	Over 8 years.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Hugh O'Brien .	11	390	262	652	336	221	557	95	85	367	303	670
Hyde	9	243	247	490	218	218	436	54	89	282	220	502
John A. Andrew	12	329	337	666	284	286	570	96	87	319	345	664
Lawrence . . .	16	673	206	879	591	177	768	111	87	517	393	910
Lewis	10	227	251	478	202	218	420	58	88	268	223	491
Lincoln	6	248	95	343	215	75	290	53	85	203	136	339
Lowell	17	461	428	889	392	358	750	139	84	466	400	866
Lyman	9	264	191	455	244	171	415	40	91	257	230	487
Martin	4	114	91	205	97	76	173	32	84	117	92	209
Mather	11	321	310	631	269	251	520	111	82	383	242	625
Minot	3	108	109	217	92	93	185	32	85	125	91	216
Norcross . . .	12	203	444	647	182	391	573	74	89	359	297	656
Phillips	5	154	139	293	142	129	271	22	92	167	105	272
Prescott	7	204	172	376	183	150	333	43	89	233	153	386
Prince	6	162	155	317	140	127	267	50	84	190	159	349
Quincy	11	400	216	616	344	177	521	95	85	310	310	620
Rice	8	154	151	305	142	134	276	29	90	148	170	318
Robt. G. Shaw .	5	99	84	183	85	70	155	28	85	101	82	183
Sherwin	9	216	220	436	195	196	391	45	90	238	206	444
Shurtleff	6	172	196	368	151	169	320	48	87	220	153	373
Stoughton . . .	4	118	102	220	104	88	192	28	87	130	96	226
Thomas N. Hart	10	371	176	547	332	149	481	66	88	328	228	556
Tileston	2	44	32	76	40	27	67	9	88	47	34	81
Warren	7	174	195	369	158	173	331	38	90	231	135	366
Washington Allston . . .	11	327	317	644	287	268	555	89	86	378	254	632
Wells	18	551	469	1,020	469	396	865	155	85	665	391	1,056
Winthrop . . .	6	135	190	325	116	159	275	50	85	174	162	336
Totals . . .	489	13,915	12,226	26,141	12,192	10,457	22,649	3,492	86.6	15,025	11,498	26,523

PRIMARY SCHOOLS.

Number of Pupils in each Class, Whole Number, and Ages, January 31 - 1894.

Districts.	First Class.	Second Class.	Third Class.	Whole Number.	Five years and under.	Six years.	Seven years.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years and over.
Adams	74	90	136	300	29	78	71	59	31	18	8	3	3
Agassiz	68	76	87	231	24	48	52	51	32	17	5	2	. .
Bennett	78	134	172	384	51	90	86	80	48	21	5	1	2
Bigelow	174	195	260	629	51	146	143	142	81	38	18	5	5
Bowditch . . .	141	147	264	552	72	133	116	110	72	31	10	6	2
Bowdoin . . .	93	98	204	395	47	104	96	74	51	16	4	2	1
Brimmer . . .	83	98	175	356	36	81	83	62	56	29	7	1	1
Bunker Hill . .	105	121	176	402	60	81	79	82	63	23	9	4	1
Chapman . . .	112	112	116	340	39	79	92	79	35	13	1	2	. .
Chas. Sumner .	158	205	226	589	90	116	157	125	70	21	6	4	. .
Comins	65	102	106	273	36	62	46	57	39	20	10	3	. .
Dearborn . . .	227	216	361	804	89	148	178	162	107	74	30	15	1
Dillaway . . .	108	153	207	468	81	103	102	105	53	18	5	1	. .
Dudley	155	200	312	667	106	128	123	126	102	54	15	9	4
Dwight	144	161	249	554	66	130	137	122	63	28	5	3	. .
Edward Everett,	135	173	198	506	45	107	150	108	61	24	9	. .	2
Eliot	101	153	199	453	75	106	99	74	59	23	10	5	2
Emerson . . .	160	155	301	616	65	124	135	138	94	38	15	4	3
Everett	184	173	233	590	45	104	130	156	76	54	14	7	4
Franklin	138	180	319	637	91	127	140	135	76	51	14	2	1
Frothingham .	123	156	214	493	83	105	141	92	49	19	4	. .	. .
Gaston	133	125	180	438	67	94	83	101	61	19	7	4	2
Geo. Putnam .	73	109	134	316	39	69	66	73	41	20	3	3	2
Gibson	112	80	179	371	55	67	111	74	49	11	2	2	. .
Hancock . . .	232	280	548	1,060	126	268	237	184	130	82	28	5	. .
Harris	100	88	110	298	26	56	67	63	54	26	4	2	. .
Harvard	150	221	228	599	90	116	130	124	83	39	13	4	. .
Henry L. Pierce	137	102	130	369	24	70	104	87	50	24	6	3	1

PRIMARY SCHOOLS. — *Concluded.*

Districts.	First Class.	Second Class.	Third Class.	Whole Number.	Five years and under.	Six years.	Seven years.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years and over.
Hugh O'Brien,	176	228	266	670	107	138	122	150	96	40	14	3	. .
Hyde	164	109	229	502	60	103	119	103	67	34	10	5	1
J. A. Andrew .	216	220	228	664	50	143	126	161	98	50	20	12	4
Lawrence . .	177	285	448	910	115	182	220	192	122	50	23	5	1
Lewis	167	133	191	491	36	94	138	117	77	24	3	1	1
Lincoln . . .	87	104	148	339	52	81	70	85	30	15	6	.	. .
Lowell	246	269	351	866	98	177	191	188	121	48	25	11	7
Lyman	105	149	233	487	51	115	91	105	62	37	17	5	4
Martin	50	59	100	209	37	44	36	45	27	14	4	2	. .
Mather	191	172	262	625	62	146	175	130	74	27	7	4	. .
Minot	42	66	108	216	25	52	48	50	31	6	3	1	. .
Norcross . . .	146	198	312	656	97	131	131	141	87	36	23	9	1
Phillips . . .	53	106	113	272	53	59	55	58	27	13	7	.	. .
Prescott . . .	101	146	139	386	67	84	82	83	40	22	5	2	1
Prince	97	90	162	349	33	73	84	72	64	15	6	2	. .
Quincy	160	231	229	620	66	120	124	117	93	66	24	9	1
Rice	114	82	122	318	17	67	64	73	52	32	8	.	1
Robt. G. Shaw	52	57	74	183	25	34	42	54	20	6	2	.	. .
Sherwin . . .	102	177	165	444	49	96	93	99	59	33	11	4	. .
Shurtleff . . .	105	118	150	373	40	81	99	79	55	14	3	2	. .
Stoughton . .	60	66	100	226	31	45	54	42	28	21	1	3	1
Thos. N. Hart,	168	174	214	556	49	122	157	104	73	37	8	4	2
Tileston . . .	20	26	35	81	9	15	23	14	15	4	1	. .	. .
Warren . . .	109	101	156	366	42	90	99	97	27	8	3	. .	. .
Washington Allston . .	147	185	300	632	64	142	172	132	70	27	18	5	2
Wells	221	279	556	1,056	167	271	227	190	112	63	23	3	. .
Winthrop . .	88	108	140	336	41	53	80	69	45	18	11	6	13
Totals . .	6,927	8,041	11,555	26,523	3,251	5,698	6,076	5,595	3,458	1,611	553	204	77

GRAMMAR SCHOOLS.

Number of Pupils to a Teacher, excluding Principals, January 31, 1854.

Schools.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.	Schools.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.
Adams	9	384	42.7	Hyde	12	654	54.5
Agassiz	10	485	48.5	J. A. Andrew,	15	733	48.9
Bennett	10	498	49.8	Lawrence	15	737	49.1
Bigelow	14	740	52.9	Lewis	14	744	53.1
Bowditch	9	470	52.2	Lincoln	11	597	54.3
Bowdoin	10	404	40.4	Lowell	15	810	54.0
Brimmer	12	592	49.3	Lyman	11	511	46.4
Bunker Hill	13	472	36.3	Martin	8	357	44.6
Chapman	12	659	54.9	Mather	14	722	51.6
Chas. Sumner	13	737	56.7	Minot	7	317	45.[illegible]
Comins	10	563	56.3	Norcross	14	619	44.[illegible]
Dearborn	13	649	49.9	Phillips	17	899	52.[illegible]
Dillaway	12	667	55.6	Prescott	9	446	49.[illegible]
Dudley	13	677	52.1	Prince	10	501	50.[illegible]
Dwight	13	662	50.9	Quincy	11	540	49.1
Edw. Everett	11	663	60.3	Rice	11	481	43.7
Eliot	21	1,004	47.8	Robt. G. Shaw	7	272	38.9
Emerson	15	747	49.8	Sherwin	11	559	50.8
Everett	14	730	52.1	Shurtleff	13	657	50.5
Franklin	13	688	52.9	Stoughton	6	285	47.5
Frothingham	12	648	54.0	Thos. N. Hart	9	463	51.4
Gaston	13	766	58.9	Tileston	3	133	44.3
Geo. Putnam,	7	373	53.3	Warren	13	675	51.9
Gibson	8	420	52.5	Washington Allston	14	811	57.9
Hancock	15	737	49.1	Wells	12	574	47.8
Harris	8	365	45.6	Winthrop	14	670	47.9
Harvard	12	658	54.8				
H. L. Pierce.	13	689	53.0	Totals	645	32,700	50.7
Hugh O'Brien	14	786	56.1				

Temporary Teachers: One each in the Brimmer, Dudley, Edward Everett, Gaston, *Hyde, Lawrence,* and Prescott; two each in the Comins and Washington Allston.

PRIMARY SCHOOLS.

Number of Pupils to a Teacher, January 31, 1894.

TRICTS.	No. of Teachers.	Av. whole No. of Pupils.	No. of Pupils to a Teacher.	DISTRICTS.	No. of Teachers.	Av. whole No. of Pupils.	No of Pupils to a Teacher.
.....	5	300	60.0	Hyde	9	490	54.4
z.....	4	220	55.0	J. A. Andrew...	12	666	55.5
tt	7	379	54.1	Lawrence	16	879	54.9
w	13	635	48.1	Lewis	10	478	47.8
tch	10	539	53.9	Lincoln.....	6	343	57.2
in	8	377	47.1	Lowell	17	889	52.3
ier	7	348	49.7	Lyman	9	455	50.5
r Hill...	10	385	38.5	Martin	4	205	51.3
an	6	333	55.5	Mather	11	631	57.4
s Sumner,	11	596	54.2	Minot	3	217	72.3
s	6	268	44.7	Norcross.....	12	647	53.9
orn ...	14	770	55.0	Phillips	5	293	58.6
ray	9	477	53.0	Prescott	7	376	53.7
y	12	652	54.3	Prince.....	6	317	52.8
t.....	10	555	55.5	Quincy	11	616	56.0
d Everett,	9	499	55.4	Rice..	8	305	38.1
... .	9	498	55.3	Robert G. Shaw	5	183	36.6
on.....	11	584	53.1	Sherwin	9	436	48.4
tt	10	570	57.0	Shurtleff.....	6	368	61.3
lin.....	12	624	52.0	Stoughton.....	4	220	55.0
ngham...	9	481	53.5	Thos. N. Hart..	10	547	54.7
n	8	463	57.9	Tileston	2	76	38.0
e Putnam,	6	312	52.0	Warren.....	7	369	52.7
n.....	6	326	54.3	Washington Allston	11	644	58.5
ck.....	18	1,058	58.8	Wells	18	1,020	56.7
... .	6	291	48.5	Winthrop	6	325	54.2
rd	11	594	54.0				
L. Pierce	7	360	51.4	Totals	489	26,141	53.5
O'Brien..	11	652	59.3				

ORARY TEACHERS: One each in the Adams, Dudley, Franklin, Gaston, Lincoln, , and Stoughton; two in the Minot.

PRIMARY SCHOOLS.

Number of Pupils promoted to Grammar Schools for the five months ende January 31, 1894.

Districts.	Boys.	Girls.	Total.	Districts.	Boys.	Girls.	T
Adams	26	29	55	Hugh O'Brien	100	63	
Agassiz	31	21	52	Hyde	55	84	
Bennett	41	38	79	John A. Andrew	67	77	
Bigelow	78	62	140	Lawrence	91	33	
Bowditch	66	56	122	Lewis	53	65	
Bowdoin	38	36	74	Lincoln	38	34	
Brimmer	31	31	62	Lowell	115	120	
Bunker Hill	48	30	78	Lyman	47	35	
Chapman	65	60	125	Martin	16	21	
Charles Sumner	85	74	159	Mather	94	74	
Comins	39	27	66	Minot	24	21	
Dearborn	94	59	153	Norcross	21	55	
Dillaway	61	41	102	Phillips	43	31	
Dudley	79	79	158	Prescott	34	41	
Dwight	68	76	144	Prince	41	50	
Edward Everett	56	58	114	Quincy	55	13	
Eliot	51	31	82	Rice	67	48	
Emerson	74	66	140	Robert G. Shaw	23	17	
Everett	67	84	151	Sherwin	44	55	
Franklin	82	87	169	Shurtleff	32	19	
Frothingham	60	50	110	Stoughton	18	34	
Gaston	55	39	94	Thomas N. Hart	92	45	
George Putnam	26	40	66	Tileston	12	10	
Gibson	37	40	77	Warren	48	51	
Hancock	92	113	205	Washington Allston	60	60	
Harris	41	35	76	Wells	121	101	
Harvard	39	47	86	Winthrop		21	
Henry L. Pierce	45	41	86	Totals	2986	2,728	5,

GRAMMAR SCHOOLS.

Number of Diploma Scholars, June, 1893. Number of these admitted to High and Latin Schools, September, 1893.

Schools.	Diplomas.			Admitted to High and Latin Schools.	Schools.	Diplomas.			Admitted to High and Latin Schools.
	Boys.	Girls.	Total.			Boys.	Girls.	Total.	
Adams	16	6	22	12	Hyde		38	38	16
Agassiz	37		37	18	J. A. Andrew	20	18	38	6
Bennett	23	24	47	33	Lawrence	78		78	26
Bigelow	39		39	12	Lewis	25	25	50	44
Bowditch		40	40	25	Lincoln	35		35	16
Bowdoin		30	30	20	Lowell	21	23	44	20
Brimmer	39		39	18	Lyman	24	18	42	16
Bunker Hill	23	22	45	15	Martin	9	25	34	20
Chapman	24	27	51	22	Mather	22	19	41	25
Chas. Sumner	23	36	59	23	Minot	16	20	36	23
Comins	28	23	51	18	Norcross		39	39	11
Dearborn	28	29	57	28	Phillips	38		38	25
Dillaway		44	44	36	Prescott	21	24	45	27
Dudley	44		44	35	Prince	30	31	61	49
Dwight	41		41	24	Quincy	37		37	10
Edward Everett	31	30	61	44	Rice	32		32	27
Eliot	58		58	18	Robt. G. Shaw	10	12	22	13
Emerson	16	24	40	21	Sherwin	36		36	3
Everett		78	78	41	Shurtleff		50	50	28
Franklin		37	37	26	Stoughton	12	13	25	15
Frothingham	16	27	43	29	Thos. N. Hart	33		33	15
Gaston		40	40	29	Tileston	9	6	15	9
George Putnam	15	10	25	18	Warren	22	25	47	29
Gibson	15	18	33	25	Washington Allston	27	27	54	36
Hancock		17	17	3	Wells		29	29	10
Harris	11	22	33	26	Winthrop		59	59	30
Harvard	24	19	43	21					
Henry L. Pierce,	24	21	45	21					
Hugh O'Brien	*45*	*39*	*84*	*51*	Totals	1177	1164	2341	1,261

SCHOOL DOCUMENT NO. 5 — 1894.

ANNUAL REPORT

OF THE

COMMITTEE ON TEXT-BOOKS.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

REPORT.

In School Committee, April, 1894.

The Committee on Text-Books, in accordance with the Rules, present their annual report.

On account of the reduction by the City Council of the very large sum of $73,000 from the amount asked for by the School Board for this year, we recognize the necessity of presenting an economical report. The committee have refrained from considering any proposition, however desirable it might appear to be, which would occasion any large increase in the expenses. We have reluctantly set aside suggestions which would be of undoubted benefit to the work of the schools, and have confined our recommendations to what, in our judgment, are absolutely required to properly carry out the requirements of the courses of study. In most cases the books recommended are to be supplied only as new books are needed, so that the expense for new books will be but little, if any, larger than if no changes are made.

No changes are recommended in the text-books for the Primary Schools.

The changes recommended in the text-books for the Grammar Schools are not new propositions, as they have previously been presented to the Board. They are as follows:

(1.) Text-books in Physiology. Last year the Board authorized the use of Blaisdell's Young Folks' Physiology in the second class of the Grammar Schools in place of Smith's Elementary Physiology and Hygiene. The recommendation of the Board of Supervisors, in which this committee concur, is that the Blaisdell book be substituted for the

Smith book in the third class. The committee recommend that the Blaisdell book be supplied to the pupils of the third class only, and that it be used interchangeably in the second and third classes. The exchange price is so very favorable to the city, that the expense of making the change will be comparatively small. We understand these terms can be availed of only by substituting the book recommended for the one now in use. It is the opinion of this committee that it will be most economical for the city to make the substitution at once.

(2.) Text-books in Writing. The Committee on Text-Books of last year, after careful investigation into the subject of writing-books, submitted to the Board a proposition that two of the series of writing-books now authorized (Duntonian, and Payson, Dunton & Scribner's) be dropped from the list and replaced by two new series (Ginn & Company's Writing-Books, and Wells's Natural Movement Method in Writing). Upon considering the subject of writing-books this year, the committee are of the opinion that a change in the writing-books is desirable, and that the proposition of last year, modified by adding the Normal Review Course in Writing to the new series proposed, ought to be adopted. The books to be displaced are used in but few schools, and the new books suggested are endorsed by a large number of the masters. There will be but little expense involved in this recommendation, as it will cost no more to furnish the books of the new series than those of the old series.

(3.) Last year this committee, on the request of the Committee on Manual Training, recommended the adoption of Hapgood's School Needlework as a text-book, and Hapgood's School Needlework, Teachers' Edition, as a reference book. It was thought advisable to authorize the teachers' edition as a reference-book last year, and to delay the introduction of the text-book until this year. We feel confident

the Board will concur in the opinions of the Committee on Manual Training and this committee, that a text-book in sewing has been a long-existing want in our schools. The committee recommend that Hapgood's School Needlework be authorized for use as a text-book in the public schools, one set of sixty copies to be furnished to each school where sewing is taught; and to be supplied on the request of the Committee on Manual Training. It is understood that the introduction shall be gradual, a few schools being supplied each year.

The changes recommended in the text-books for the High and Latin Schools are as follows:

(1.) Text-books in Physiology. Hutchinson's Physiology has been on the authorized list for several years, but for the past three or four years only a very small number of copies have been used, and at the present time we understand there are no copies in use. The committee recommend that this book be dropped from the list. Blaisdell's Our Bodies and How We Live is now in general use in the High Schools. It is not, in the opinion of the Board of Supervisors, of the right grade for these schools, and future classes entering from the Grammar Schools will have used the same book in their Grammar School course. The committee, upon the suggestion of the Board of Supervisors, recommend that Martin's The Human Body (Edition with Special Treatment of Alcohol and other Stimulants and Narcotics) be authorized for use as a text-book in the High Schools, in place of Blaisdell's Our Bodies and How We Live. The exchange rates offered are so favorable, the expense of this change will not be large. In the interests of economy, we recommend that the substitution be made at once.

(2.) Text-books in Book-keeping. Last year this committee recommended that Seavy's Practical Business Book-keeping by Double Entry and Seavy's Manual of Business Transactions be authorized for use as text-books in the High

Schools. The matter came up for consideration by the Board in October last, near the end of the financial year. It was thought advisable not to adopt the proposition at that time of the year, and the matter was recommitted to this committee. We now renew the recommendation, believing that these books are needed in our High Schools.

(3.) Upon the request of the head-masters of the Latin Schools the committee recommend that Kiepert's Atlas Antiquus be authorized for use as a text-book in the Latin Schools, to be furnished as new atlases are needed.

(4.) The committee recommend that Heath's French Dictionary be authorized for use as a text-book in the Latin and High Schools, to be furnished as new books are needed, and that no more copies of Gasc's French Dictionary (the present text-book) be purchased. Gasc's Dictionary is a small book, is poorly printed, and the type is very small. Heath's Dictionary is a larger book, is printed from new plates, and is not so expensive a book as the Gasc Dictionary. In the opinion of the Director of Modern Languages, Heath's Dictionary is the better book.

(5.) The committee, on the suggestion of the Director of Modern Languages, recommend that Grandgent's Short French Grammar be added to the list of text-books for the Latin and High Schools. The cost of the new book is considerably less than the one now in use. It is understood that the new book is to be supplied to a few classes, and tried before any general introduction is made.

(6.) The committee, on the suggestion of the Director of Modern Languages, recommend that Harris's German Lessons be added to the list of text-books for the Latin and High Schools.

The committee recommend the addition of five reference-books to the list: one for the Normal School, one for the Kindergartens, and three for the desks of teachers of certain classes of the Grammar and Primary Schools. The books

are inexpensive, and but a limited number of eac needed.

On the suggestion of the Committee on Kinde the committee recommend that a kindergarten authorized for use in the Kindergartens.

As the amount to be expended each year for sup ary reading-books is fixed by the Board, no a expense is incurred by adding books to the list.

The committee recommend the passage of the orders.

For the Committee,

SOLOMON SCHINDLE

Cha

1. *Ordered*, That Blaisdell's Young Folks' Ph be authorized for use as a text-book in the third cla Grammar Schools in place of Smith's Elementary Ph and Hygiene; the new book to be supplied to the the third class only, and to be used interchangeal second and third classes.

2. *Ordered*, That Smith's Elementary Physio Hygiene be dropped from the list of authorized te of the Grammar Schools.

3. *Ordered*, That Ginn & Company's Writin the books of Wells's Natural Movement Method in and the books of the Normal Review System of W authorized for use as text-books in the Grammar Sc

4. *Ordered*, That the Duntonian Series, and Dunton, & Scribner's Writing-Books be dropped list of authorized text-books.

5. *Ordered*, That Hapgood's School Needle authorized for use as a text-book in the public s one set of sixty copies to be supplied to each sch sewing is taught. The books to be supplied

schools each year on the request of the Committee on Manual Training.

6. *Ordered*, That Hutchinson's Physiology be dropped from the list of authorized text-books for the High Schools.

7. *Ordered*, That Martin's The Human Body (Edition with Special Treatment of Alcohol and other Stimulants and Narcotics) be authorized for use as a text-book in the High Schools, in place of Blaisdell's Our Bodies and How We Live.

8. *Ordered*, That Seavy's Practical Business Book-keeping by Double Entry and Seavy's Manual of Business Transactions be authorized for use as text-books in the High Schools.

9. *Ordered*, That Kiepert's Atlas Antiquus be authorized for use as a text-book in the Latin Schools, to be supplied as new atlases are needed.

10. *Ordered*, That Heath's French Dictionary be authorized for use as a text-book in the Latin and High Schools, to be supplied as new French Dictionaries are needed.

11. *Ordered*, That no more copies of Gasc's French Dictionary be purchased.

12. *Ordered*, That Grandgent's Short French Grammar, and Harris's German Lessons, be authorized for use as text-books in the Latin and High Schools.

13. *Ordered*, That the following-named books be authorized for use as reference-books:

Normal School. — Quick's Educational Reformers. *Grammar Schools.* — A Pathfinder in American History (Goody and Twitchell), one copy for the desk of each teacher of the first class. Patriotic selections — for Memorial Day (Matthews and Rule), one copy for each school. *Grammar and Primary Schools.* — From Seed to Leaf (Newell), one copy for the desk of each teacher of the fifth and sixth classes of the Grammar Schools, and for the desk of each teacher of the first class of the Primary Schools. *Kindergartens.* — In

the Child's World (Poulsson), one copy for each Kindergarten.

14. *Ordered*, That the Kindergarten chart, Froebel's Grandmother and Mother, prepared by E. F. Bethmann, be authorized for use in the Kindergartens — one chart for each Kindergarten.

15. *Ordered*, That Smith's Primer of Physiology and Hygiene be dropped from the list of authorized reference books for the Primary and Grammar Schools.

16. *Ordered*, That the following-named books be added to the list of authorized supplementary reading-books:

Grammar Schools — Circulating. — Gods and Heroes (Francillon); The Nine Worlds (Litchfield); Twilight Thoughts (Claude); The Peasant and the Prince (Martineau); Ten Great Events in History (Johonnot's Series); Stories of Heroic Deeds (Johonnot's Series); Stories of Our Country (Johonnot's Series); Grandfather's Tales (Johonnot's Series); Ethics of Success (Thayer). *Primary Schools — Circulating.* — First Readers: The Riverside Primer and Reader (Houghton, Mifflin, & Co.); Cyr's The Children's First Reader; Hodskins' Little People's Reader; The Normal Course in Reading. Second Readers: The Normal Course in Reading.

SCHOOL DOCUMENT NO. 6 — 1894.

NOMINATIONS FOR REËLECTION

REPORT

OF THE

COMMITTEE ON NOMINATIONS

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

REPORT.

In School Committee, Boston, June 12, 1894.

The Committee on Nominations have considered the nominations submitted to them by the committees in charge, and recommend for reëlection the following-named instructors to serve during the pleasure of the School Committee, and for the term ending Aug. 31, 1895.

The number of teachers recommended for reëlection in excess of the number allowed by the rules is thirty-five. In addition to this number there are nine teachers allowed where the number of pupils is in each case within four pupils or less of the required number, but these teachers are not counted as extra teachers, because their service is required and allowed under the spirit of the rules. Of the thirty-four extra teachers there are six cases where the number of pupils in each case falls but six below the number authorizing their appointment, but the committee have counted them as extra teachers because of the necessity of assuming a reasonable basis for decision. There are twenty-six teachers, to which the several schools and districts are entitled under the rules, which are not asked for, so that the real number of extra teachers called for in excess of the number authorized by the rules — and not counting the nine teachers mentioned above — is nine. We submit that this is a very small number of extra teachers to ask for in a corps of over fourteen hundred teachers.

The reasons given for the appointment of these extra teachers, which seem to us just and sufficient, are on account (1) of the insufficient accommodations, (2) the necessity of maintaining classes outside the regular school buildings,

(3) the necessity of establishing classes, with less than the standard number of pupils to a teacher, in certain growing sections of the city which are remote from other schools. The rules provide that this committee may allow extra teachers to preserve the proper grading of the schools, and on account of insufficient seating capacity.

The following is a list of extra teachers asked for:

English High School, two; Rice Training School, one.

Grammar Schools. — Three in the Bunker Hill District; two each in the Adams, Bowdoin, and Robert G. Shaw Districts; one each in the Agassiz, Dearborn, Dwight, Emerson, Harris, Lyman, Martin, Minot, Norcross, Prescott, Shurtleff, Stoughton, and Winthrop Districts.

Primary Schools. — One each in the Bigelow, Bowdoin, Bunker Hill, Comins, Lewis, Norcross, Prince, Robert G. Shaw, and Stoughton Districts.

The Board has, by special votes during the past few years, authorized the appointment of teachers with higher ranks than the rules allow, viz.: one junior-master in the East Boston High School; one junior-master in the West Roxbury High School; one sub-master in the Bennett District; one sub-master in the Quincy District; one first assistant in the Robert G. Shaw District, and one second assistant in the Bigelow District. The Board has also from time to time authorized the establishment of extra ungraded classes. The rules allow but one ungraded class in each district. At present there are allowed ten ungraded classes in the Eliot District, five in the Hancock District, four each in the Lawrence and Phillips Districts, three in the Wells District, and two in the Quincy District. We recommend that the Board of Supervisors be requested to consider and report upon the advisability of amending the rules so as to provide that extra ungraded classes may be allowed in the Grammar Schools, and append to this report an order for that purpose.

SECT. 88. The Regulations, which fix the r
teachers any school is entitled to, shall not be held to
the reduction in rank of any regularly confirmed teacl
is to serve in the same school in which he is already s
except as is hereinafter provided. Immediately af
annual election a list of teachers in service with ranks
than the number of pupils in the schools would allow
Regulations strictly applied, if there be any such, s
sent to the committees in charge. When vacancies c
such ranks, the committees in charge shall consi
transfer of these teachers before the vacancies are f
any other way. A teacher declining to be so trar
may thereupon be reduced in rank, as required by th
ulations.

Teachers with ranks higher than the rules allow, fo
no special action has been taken by the Board, are se
follows:

Bunker Hill District. — One first assistant, one
assistant.

Comins District. — One first assistant.

Lawrence District. — One sub-master.

Lyman District. — One first assistant, one second
ant.

Martin District. — One sub-master, one second as

Quincy District. — One second assistant; one sec
sistant, Primary School.

Sherwin District. — One sub-master.

Stoughton District. — Principal, with rank of mas

Winthrop District. — One second assistant.

As this committee have stated in previous repor
believe this rule should be abolished or amende
only purpose seems to be to prevent the reduc
rank of teachers. The spirit of the rule is that te
with ranks higher than the rules permit, should b
ferred to other districts as vacancies occur in th

ranks. The fact is that these teachers are not transferred, only one case of such a transfer having been made to our knowledge. It might not be wise, perhaps, to reduce a teacher in rank as soon as the numbers fail to warrant the higher rank, but it does not seem to us wise to continue such teacher in the higher rank indefinitely. Appended to this report is an order proposing that the rules be amended so as to provide that whenever it shall appear at the annual canvass of teachers that teachers are employed with ranks higher than the rules allow, said teachers may be continued in said ranks for a limited time, at the expiration of which time they shall, if not entitled to said ranks, be reduced in rank, unless otherwise ordered by the Board. This will allow ample time for a school to increase its numbers, or permit the teacher to be transferred to some other school. The committee recommend the passage of the following orders, the first, second, and third orders under a suspension of the rules.

For the Committee,

CAROLINE E. HASTINGS,
Chairman.

1. *Ordered*, That teachers with higher ranks than the rules allow be authorized for the school year 1894–95 as follows: One junior-master in the East Boston High School; one junior-master in the West Roxbury High School; one sub-master in the Bennett District; one sub-master in the Quincy District; one first assistant in the Robert G. Shaw District; and one second assistant in the Bigelow District.

2. *Ordered*, That ungraded classes be allowed in the following-named districts, as stated: Eliot, ten; Hancock, five; Lawrence, four; Phillips, four; Quincy, two; Wells, three.

3. *Ordered*, That the nomination of teachers for reëlection, to serve during the pleasure of the School Committee,

and for the term ending Aug. 31, 1895, as contained and specified in School Document No. 6, 1894, be confirmed.

4. *Ordered*, That the Committee on Rules and Regulations consider and report upon the expediency of amending the rules, as follows:

Substitute the following for Section 88:

"SECT. 88. Whenever it shall appear at the annual canvass of teachers for reëlection that teachers are employed with ranks higher than the rules allow, such teachers may, upon the recommendation of the committees in charge approved by the Committee on Nominations, be continued in their ranks for two years, and if at the end of the two years, such teachers are not entitled to their ranks, they shall be reduced in rank; *provided*, that this section shall not apply to teachers whose ranks have been authorized by special vote of the Board."

5. *Ordered*, That the Board of Supervisors consider and report to this Board on the advisability of amending the rules so as to provide that extra ungraded classes be allowed in the Grammar Schools, with such recommendations as they deem desirable.

NORMAL SCHOOL.

Greatest whole number belonging during the year, 193. Entitled to 13 teachers; 10 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *Sub-Master:* Wallace C. Boyden. *1st Asst.:* Katharine H. Shute. *2d Asst.:* Alice M. Dickey.

FOR TERM ENDING AUGUST 31, 1895. — *Theory and practice of Kindergarten:* Laura Fisher.

ON PROBATION. — *2d Asst.:* Fanny E. Coe. *Theory and practice of Kindergarten.* — *Asst.:* Mary H. Waterman.

RICE TRAINING SCHOOL.

Greatest whole number belonging during the year, 821. Entitled to 17 regular teachers, 1 special; 19 employed.

FOR TERM ENDING AUGUST 31, 1895. — *2d Asst.:* Mary C. Mellyn.

ON PROBATION. — *2d Assts.:* Lotta A. Clark, Margaret A. Leahy.

TRAINING SCHOOL KINDERGARTEN.

Greatest whole number belonging during the year, 56. Entitled to 2 teachers; 2 employed.

FOR TERM ENDING AUGUST 31, 1895. — *Assts.:* Elizabeth C. Barry, Alice L. McLauthlin.

LATIN AND HIGH SCHOOLS.

BOYS' LATIN SCHOOL.

Greatest whole number belonging during the year, 571. Entitled to 17 teachers; 16 employed.

To serve during the pleasure of the School Committee. — *Junior Master:* William R. Morse.

For term ending August 31, 1895. — *Junior Masters:* Henry Pennypacker, William T. Campbell.

On Probation. — *Junior Masters:* Frank E. Bateman, Selah Howell.

GIRLS' LATIN SCHOOL.

Greatest whole number belonging during the year, 229. Entitled to 11 master and 8 assistants; 8 employed.

For term ending August 31, 1895. — *Master:* Edward H. Atherton. *Asst.:* Florence Dix.

ENGLISH HIGH SCHOOL (Boys).

Greatest whole number belonging during the year, 736. Entitled to 21 teachers; 23 employed.

To serve during the pleasure of the School Committee. — *Junior Master:* James Mahoney.

For term ending August 31, 1895. — *Master:* Frank O. Carpenter. *Junior Masters:* William T. Strong, Samuel F. Tower, Henry M. Wright.

GIRLS' HIGH SCHOOL.

Greatest whole number belonging during the year, 777. Entitled to 22 teachers; 21 employed.

For term ending August 31, 1895. — *Asst.:* Elizabeth E. Hough.

ROXBURY HIGH SCHOOL (Boys and Girls).

Greatest whole number belonging during the year, 520. Entitled to 15 teachers; 14 employed.

For term ending August 31, 1895. — *Asst.:* Jennie R. Ware.

On Probation. — *Assts.:* Mary H. Gibbons, Josephine W. Greenlaw, Mabel F. Wheaton, Eugenia M. Williams. *Lab. Asst.:* George S. Berry, Jr.

DORCHESTER HIGH SCHOOL (Boys and Girls).

Greatest whole number belonging during the year, 233. Entitled to 7 teachers; 6 employed.

To serve during the pleasure of the School Committee. — *Assts.:* Edith S. Cushing.

For term ending August 31, 1895. — *Assts.:* Lucy A. Frost, Emily J. Tucker.

On Probation. — *Asst.:* Sara W. Wilson.

CHARLESTOWN HIGH SCHOOL (Boys and Girls).

Greatest whole number belonging during the year, 192. Entitled to 6 teachers; 6 employed.

On Probation. — *Asst.:* Lillian M. Towne.

WEST ROXBURY HIGH SCHOOL (Boys and Girls).

Greatest whole number belonging during the year, 135. Entitled to 4 teachers; 4 employed.

For term ending August 31, 1895. — *Asst.:* M. Louise Foster.

On Probation. — *Junior Master:* George F. Partridge. *Asst.:* Mary I. Adams.

BRIGHTON HIGH SCHOOL (Boys and Girls).

Greatest whole number belonging during the year, 98. Entitled to 3 teachers; 3 employed.

To serve during the pleasure of the School Committee. — *Asst.:* Marietta F. Allen.

EAST BOSTON HIGH SCHOOL (Boys and Girls).

Greatest whole number belonging during the year, 121. Entitled to 4 teachers; 4 employed.

For term ending August 31, 1895. — *Junior Master:* Charles W. Gerould. *Asst.:* Josephine Rice. *Special:* Jacob Lehmann.

MECHANIC ARTS HIGH SCHOOL.

Greatest whole number belonging during the year, 217. Entitled to 9 teachers; 6 employed.

On Probation. — *Junior-Masters:* William Fuller, Roswell Parish, Herbert S. Weaver. *Instructors:* Benjamin F. Eddy, Ludwig Frank, Herbert M. Woodward.

FIRST DIVISION.

ADAMS DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 393. Average whole number belonging, 385. Entitled to 6 regular teachers, 1 special; 9 employed.

Primary Schools. — Greatest whole number belonging, 334. Entitled to 6 teachers; 6 employed.

On Probation. — *4th Asst.:* Martha P. M. Walker.

CHAPMAN DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 668. Average whole number belonging, 657. Entitled to 12 teachers; 12 employed.

Primary Schools. — Greatest whole number belonging, 380. Entitled to 7 teachers; 6 employed.

For term ending August 31, 1895. — *3d Assts.:* Margaret D. Barr, Elizabeth A. Bloomfield, Grace M. Strong. *4th Asst.:* Mabel V. Roche.

On Probation. — *Sub-Master:* Harry N. Andrews. *1st Asst.:* Lucy W. Eaton.

EMERSON DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 757. Average whole number belonging, 746. Entitled to 13 regular teachers, 1 special; 15 employed.

Primary Schools. — Greatest whole number belonging, 640. Entitled to 11 teachers; 11 employed.

To serve during the pleasure of the School Committee. — *Sub-*

Master: Horatio D. Newton. *2d Asst.:* Mary D. Day. *3d Assts.:* Annie S. Hayward, Emma J. Irving.

For term ending August 31, 1895. — *3d Assts.:* Ellen S. Bloomfield, Mary F. Simmons, Helen M. Slack. *4th Assts.:* Sarah A. Atwood, Hattie H. Coan, Caroline E. Nutter, Charlotte G. Ray.

On Probation. — *3d Asst.:* Sara F. Littlefield.

LYMAN DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 524. Average whole number belonging, 520. Entitled to 9 regular teachers, 1 special; 11 employed.

Primary Schools. — Greatest whole number belonging, 516. Entitled to 9 teachers; 9 employed.

For term ending August 31, 1895. — *Sub-Master:* Herbert L. Morse. *3d Assts.:* Emma M. Bates, Lillian G. Plummer. *4th Assts.:* Catherine A. Sullivan, Annie M. Wilcox.

On Probation. — *4th Asst.:* Julia A. Logan.

SECOND DIVISION.

BUNKER HILL DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 516. Average whole number belonging, 477. Entitled to 9 regular teachers, 1 special; 13 employed.

Primary Schools. — Greatest whole number belonging, 448. Entitled to 8 teachers; 10 employed.

To serve during the pleasure of the School Committee. — *4th Asst.:* Kate T. Brooks.

For term ending August 31, 1895. — *4th Asst.:* Anna P. Hannon.

FROTHINGHAM DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 651. Average whole number belonging, 645. Entitled to 11 regular teachers, 1 special; 12 employed.

Primary Schools. — Greatest whole number belonging, 493. Entitled to 9 teachers; 9 employed.

For term ending August 31, 1895. — *Sub-Master:* Walter L. Harrington. *3d Assts.:* Mary Colesworthy, Susan T. Dundon, Cecelia A. Kelley. *4th Assts.:* Theresa E. Hayes, Florence I. Morse.

On Probation. — *3d Asst.:* Inez Haynes.

HARVARD DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 688. Average whole number belonging, 657. Entitled to 12 regular teachers, 1 special; 13 employed.

Primary Schools. — Greatest whole number belonging, 653. Entitled to 12 teachers; 12 employed.

To serve during the pleasure of the School Committee. — *2d Asst.:* Caroline E. Gary. *2d Asst., Primary School:* Agnes A. Herlihy. *4th Asst.:* Elizabeth G. Desmond.

For term ending August 31, 1895. — *3d Assts.:* Theresa G. Power, Katherine C. Wigg. *4th Assts.:* Sarah R. Dodge, Helena G. Herlihy, S. Janet Jameson.

On Probation. — *3d Asst.:* Mabel P. Foster. *4th Asst.:* Effie A. Worcester.

NOMINATIONS FOR REELECTION.

PRESCOTT DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 451. Aver
whole number belonging, 447. Entitled to 8 teachers; 9 employed.
Primary Schools. — Greatest whole number belonging, 423. Entitle
8 teachers; 7 employed.
To serve during the pleasure of the School Committee. — S
Master: William H. Furber.
For term ending August 31, 1895. — *3d Asst.:* Nellie L. P. Uihlein
On Probation. — *1st Asst.:* Mary C. Sawyer. *2d Asst.:* Julia
Powers. *3d Asst.:* Margaret M. Whalen.

WARREN DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 686. Aver
whole number belonging, 677. Entitled to 12 regular teachers, 1 special;
employed.
Primary Schools. — Greatest whole number belonging, 377. Entitle
7 teachers; 7 employed.
For term ending August 31, 1895. — *Sub-Master*, William M. Newt
3d *Asst.:* Sarah J. Taff. *4th Asst.:* Jessie G. Paine.
On Probation. — *1st Asst.:* Anna D. Dalton. *2d Asst.:* Mary F. Ha
3d *Assts.:* Rose M. Cole, Abbie M. Mott, Caroline A. Meade (from Sept
1894).

THIRD DIVISION.

BOWDOIN DISTRICT (Girls).

Grammar School. — Greatest whole number belonging, 423. Aver
whole number belonging, 401. Entitled to 7 regular teachers, 1 special;
employed.
7 Primary Schools. — Greatest whole number belonging, 416. Entitled
teachers; 8 employed.
To serve during the pleasure of the School Committee. —
sts.: Martha T. O'Hea, E. Laura Tilden. *2d Asst.: Primary Scho*
rah E. Brown. *4th Assts.:* Julia G. L. Morse.
For term ending August 31, 1895. — *1st Asst.:* James W. Webst
3d *Asst.:* Christine Deane.
On Probation. — *4th Asst.:* Elizabeth N. Smith.

ELIOT DISTRICT (Boys).

Grammar School. — Greatest whole number belonging, 1,020. Aver
22 ole number belonging, 1,003. Entitled to 12 regular teachers, 10 speci
employed.
9 Primary Schools. — Greatest whole number belonging, 530. Entitled
teachers; 9 employed.
For term ending August 31, 1895. — *Sub-Master:* Benjamin J. Hin
3 *Assts.:* Catherine J. Cunningham, B. Louise Hagerty, Celia V. Le
Asst.: Katharine G. Sutliffe.
On Probation. — *3d Assts.:* Ellen G. Desmond, Sylvia A. Richa
(from Sept. 1, 1894), Effie I. Seldis. *4th Asst.:* Mary H. Lannon.

HANCOCK DISTRICT (Girls).

Grammar School. — Greatest whole number belonging, 756. Avera
whole number belonging, 746. Entitled to 10 regular teachers, 5 special;
employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 1,072. Entitled to 19 teachers; 19 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *4th Asst.:* Matilda F. Bibbey.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Annie G. Conroy, Emma L. Mitchell, Elizabeth T. O'Brien, Ariel D. Savage. *4th Assts.:* Annie R. Dolan, Adelaide R. Donovan, Catherine W. Fraser, Mary J. Murray, Annie M. Niland, Lena M. Rendall.

ON PROBATION. — *3d Asst.:* Hattie R. Christiernin. *4th Asst.:* Theresa M. Fraser.

PHILLIPS DISTRICT (BOYS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 917. Average whole number belonging, 899. Entitled to 14 regular teachers, 4 special; 18 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 283. Entitled to 5 teachers; 5 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *3d Asst.:* Julia F. Holland. *4th Asst.:* Margaret D. Mitchell.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Margaret J. Cunningham. *2d Asst., Primary School:* Jennie A. Dodson. *4th Asst.:* Angie P. S. Andrews.

ON PROBATION. — *Sub-Masters:* Cyrus B. Collins, Frank L. Keith. *3d Assts.:* Mary E. McIntire, Eva M. Moran.

WELLS DISTRICT (GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 593. Average whole number belonging, 578. Entitled to 9 regular teachers, 3 special; 12 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 1,071. Entitled to 19 teachers; 18 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *4th Asst.:* Nellie M. Durgin.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Emily H. Macdonald. *4th Assts.:* Hannah E. Collins, Annie F. Daly, Mary F. Finneran, Katharine L. King, Esther C. Moore.

ON PROBATION. — *2d Asst.:* Lizzie F. Stevens (from Sept. 1, 1894). *3d Asst.:* Mary F. Flanagan. *4th Assts.:* Selina A. Black, H. Isabel Cottrell.

FOURTH DIVISION.

BRIMMER DISTRICT (BOYS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 621. Average whole number belonging, 600. Entitled to 11 regular teachers, 1 special; 12 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 364. Entitled to 7 teachers; 7 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *1st Asst.:* Ella L. Burbank. *2d Asst.:* Josephine Garland. *3d Asst.:* James Burrier.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Annie P. James, Mary E. Keyes, Mary J. Marlow.

ON PROBATION. — *4th Asst.:* Margaret L. Eaton.

PRINCE DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 525. Average whole number belonging, 489. Entitled to 9 regular teachers, 1 special; 10 employed.

Primary Schools. — Greatest whole number belonging, 357. Entitled to 6 teachers; 7 employed.

To serve during the pleasure of the School Committee. — *4th Asst.:* Katherine L. Campbell.

For term ending August 31, 1895. — *4th Assts.:* Grace S. Pierce, Manetta W. Penney.

On Probation. — *3d Asst.:* Ellen P. Longfellow. *2d Asst. Primary School:* Laura K. Hayward. *4th Assts.:* Caroline F. Barnes, Alice C. Butler.

QUINCY DISTRICT (Boys).

Grammar School. — Greatest whole number belonging, 592. Average whole number belonging, 554. Entitled to 9 regular teachers, 2 special; 11 employed.

Primary Schools. — Greatest whole number belonging, 623. Entitled to 11 teachers; 11 employed.

To serve during the pleasure of the School Committee. — *3d Asst.:* Margaret E. Carey. *4th Asst.:* Abbie E. Batchelder.

On Probation. — *3d Asst.:* Annie F. Merriam.

WINTHROP DISTRICT (Girls).

Grammar School. — Greatest whole number belonging, 700. Average whole number belonging, 669. Entitled to 13 teachers; 14 employed.

Primary Schools. — Greatest whole number belonging, 338. Entitled to 6 teachers; 6 employed.

For term ending August 31, 1895. — *4th Asst.:* Mary L. Hennessey.

FIFTH DIVISION.

DWIGHT DISTRICT (Boys).

Grammar School. — Greatest whole number belonging, 675. Average whole number belonging, 661. Entitled to 11 regular teachers, 1 special; 13 employed.

Primary Schools. — Greatest whole number belonging, 561. Entitled to 10 teachers; 10 employed.

To serve during the pleasure of the School Committee. — *3d Asst.:* Clara P. Wardwell. *4th Asst.:* Sara Mock.

For term ending August 31, 1895. — *3d Assts.:* Emma A. Child, Georgie M. Clark. *4th Assts.:* Georgina E. McBride, Annie J. O'Brien.

On Probation. — *3d Asst.:* Priscilla Whiton.

EVERETT DISTRICT (Girls).

Grammar School. — Greatest whole number belonging, 743. Average whole number belonging, 729. Entitled to 13 regular teachers, 1 special; 14 employed.

Primary Schools. — Greatest whole number belonging, 592. Entitled to 11 teachers; 10 employed.

To serve during the pleasure of the School Committee. — *4th Asst.:* Margaret H. Manning.

For term ending August 31, 1895. — *3d Asst.:* Minna L. Wentworth. *4th Asst.:* Bertha Bamber.

On Probation. — *2d Assts.:* Anna E. Grover, Emma F. Porter. *3d Assts.:* Ida B. Henderson, Emily T. Kelleher, Anna I. Madden, Annie J. Reed. *4th Asst.:* Mary E. McGraw.

FRANKLIN DISTRICT (Girls).

Grammar School. — Greatest whole number belonging, 702. Average whole number belonging, 677. Entitled to 13 regular teachers, 1 special; 13 employed.

Primary Schools. — Greatest whole number belonging, 655. Entitled to 12 teachers; 12 employed.

For term ending August 31, 1895. — *2d Asst.:* Octavia L. Cram. *3d Assts.:* Lillian S. Bourne, Abby A. Hayward, Lillian J. MacRae, Ida M. Mitchell. *4th Assts.:* Elizabeth E. Daily, Florence H. Rich, Lillian Tishler.

HYDE DISTRICT (Girls).

Grammar School. — Greatest whole number belonging, 688. Average whole number belonging, 648. Entitled to 12 regular teachers, 1 special; 12 employed.

Primary Schools. — Greatest whole number belonging, 506. Entitled to 9 teachers; 9 employed.

To serve during the pleasure of the School Committee. — *3d Asst.:* Sarah R. Wentworth.

For term ending August 31, 1895. — *3d Assts.:* Ada M. Fitts, Elizabeth A. Spaulding, Annie M. Trundy. *4th Assts.:* Celia Bamber, Mary A. Higgins.

On Probation. — *1st Asst.:* Esther H. Fletcher. *4th Asst.:* Estella M. Hall.

SHERWIN DISTRICT (Boys).

Grammar School. — Greatest whole number belonging, 594. Average whole number belonging, 578. Entitled to 10 regular teachers, 1 special; 11 employed.

Primary Schools. — Greatest whole number belonging, 495. Entitled to 9 teachers; 9 employed.

To serve during the pleasure of the School Committee. — *3d Asst.:* Mary F. Roome.

For term ending August 31, 1895. — *Sub-Master:* Frederick L. Owen. *3d Assts.:* Elizabeth G. Dowd, Mary N. Regan.

SIXTH DIVISION.

BIGELOW DISTRICT (Boys).

Grammar School. — Greatest whole number belonging, 812. Average whole number belonging, 765. Entitled to 14 regular teachers, 1 special: 15 employed.

Primary Schools. — Greatest whole number belonging, 644. Entitled to 12 teachers; 13 employed.

For term ending August 31, 1895. — *Sub-Master:* William L. Murphy. *2d Asst.:* Martha A. Goodrich. *3d Asst.:* Elizabeth M. Mann. *4th Assts.:* Sarah T. Driscoll, Julia G. Leary, Florence L. Spear.

On Probation. — *3d Asst.:* Arvilla T. Harvey. *4th Asst.:* Julia A. Rourke.

GASTON DISTRICT (GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 778. Average whole number belonging, 764. Entitled to 14 teachers; 14 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 483. Entitled to 9 teachers; 9 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *4th Assts.:* M. Isabel Harrington, Isabella J. Murray.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Mary S. Laughton, Julia A. Noonan. *4th Assts.:* Jennie G. Carmichael, Eleanor F. Elton.

ON PROBATION. — *2d Asst.:* Mary B. Barry. *3d Asst.:* Louise E. Means

JOHN A. ANDREW DISTRICT (BOYS AND GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 749. Average whole number belonging, 721. Entitled to 13 regular teachers, 1 special; 14 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 680. Entitled to 12 teachers; 12 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *3d Asst.:* Alice T. Cornish. *4th Asst.:* Grace E. Holbrook.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Bertha E. Miller *4th Asst.:* Annie M. Driscoll.

ON PROBATION. — *4th Asst.:* Roxanna L. Johnston.

LAWRENCE DISTRICT (BOYS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 816. Average whole number belonging, 762. Entitled to 12 regular teachers, 4 special; 16 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 910. Entitled to 16 teachers; 16 employed.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Agnes G. Gilfether. *4th Assts.:* Elizabeth J. Andrews, Elinor F. Buckley.

ON PROBATION. — *2d Asst.:* Eleanor R. Grant. *3d Assts.:* Mary E. Denning, Eva E. Hall.

LINCOLN DISTRICT (BOYS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 613. Average whole number belonging, 592. Entitled to 10 regular teachers, 1 special; 11 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 365. Entitled to 7 teachers; 7 employed.

FOR TERM ENDING AUGUST 31, 1895. — *Sub-Masters:* Charles N. Bentley, William E. Perry. *3d Assts.:* Florence O. Bean, Annie M. Mulcahey, Ellen A. McMahon. *4th Asst.:* Ellen V. Courtney.

ON PROBATION. — *3d Asst.:* Sarah P. Clemons. *4th Asst.:* Helen A. Emery.

NORCROSS DISTRICT (GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 680. Average whole number belonging, 646. Entitled to 12 regular teachers, 1 special; 14 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 677. Entitled to 12 teachers; 13 employed.

FOR TERM ENDING AUGUST 31, 1895. — *1st Asst.:* M. Elizabeth Lewis. *3d Asst.:* Mary E. Bernhard.

ON PROBATION. — *2d Asst.:* Lillian K. Lewis. *3d Asst.:* Isabel M. Wier.

SHURTLEFF DISTRICT (GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 678. Average whole number belonging, 661. Entitled to 12 teachers; 13 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 368. Entitled to 7 teachers; 6 employed.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Mary M. Clapp. *4th Asst.:* Lillian M. Hall.

THOMAS N. HART DISTRICT (BOYS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 470. Average whole number belonging, 448. Entitled to 8 regular teachers, 1 special; 9 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 560. Entitled to 10 teachers; 10 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *4th Asst.:* Lura M. Power.

FOR TERM ENDING AUGUST 31, 1895. — *2d Asst.:* John D. Philbrick. *4th Assts.:* Evelyn M. Condon, Florence Harlow, Daisy E. Welch.

SEVENTH DIVISION.

COMINS DISTRICT (BOYS AND GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 573. Average whole number belonging, 562. Entitled to 10 regular teachers, 1 special; 10 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 278. Entitled to 5 teachers; 6 employed.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Margaret A. McGuire, Mary L. Williams.

ON PROBATION. — *1st Asst.:* Cora S. Locke. *3d Asst.:* Elizabeth G. Phelps.

DEARBORN DISTRICT (BOYS AND GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 652. Average whole number belonging, 649. Entitled to 12 teachers; 13 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 833. Entitled to 15 teachers; 15 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *3d Asst.:* Alice W. Emerson. *4th Asst.:* Emma L. Merrill.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Helen Doherty. *4th Asst.:* Mary E. Connor.

ON PROBATION. — *3d Asst.:* Sarah A. Driscoll. *4th Asst.:* Katherine O'Brien.

DILLAWAY DISTRICT (GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 676. Average whole number belonging, 665. Entitled to 12 teachers; 12 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 477. Entitled to 9 teachers; 9 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *2d Asst.:* Helen C. Mills.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Lucia A. Ferguson, Ella F. Little, Alice E. Robinson. *4th Asst.:* Ellen A. Scollin.

ON PROBATION. — *3d Asst.:* Susan H. McKenna. *2d Asst., Primary School:* Mary L. Shepard. *4th Assts.:* Elizabeth A. O'Neil, Edith Rose.

DUDLEY DISTRICT (Boys).

GRAMMAR SCHOOL. — Greatest whole number belonging, 682. Average whole number belonging, 677. Entitled to 12 regular teachers, 1 special; 13 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 710. Entitled to 13 teachers; 13 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *1st Asst.:* Alice E. Farrington.

ON PROBATION. — *4th Asst.:* Ingemisca G. Weysse.

GEORGE PUTNAM DISTRICT (Boys and Girls).

GRAMMAR SCHOOL. — Greatest whole number belonging, 382. Average whole number belonging, 372. Entitled to 7 teachers; 7 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 314. Entitled to 6 teachers; 6 employed.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Blanche A. Morrill. *2d Asst., Primary School:* Julia H. Cram. *4th Assts.:* Mabel L. Brown, Rosanna L. Rock, Ede F. Travis.

ON PROBATION. — *Sub-Master:* William L. Bates. *2d Asst.:* Ellen L. Leach. *4th Asst.:* Susan J. MacConnell.

HUGH O'BRIEN DISTRICT (Boys and Girls).

GRAMMAR SCHOOL. — Greatest whole number belonging, 799. Average whole number belonging, 788. Entitled to 14 regular teachers, 1 special; 14 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 674. Entitled to 12 teachers; 11 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *2d Asst., Primary School:* Emily M. Pevear. *4th Asst.:* Isabella R. Bissett.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Esther E. McGrath. Elizabeth F. Pinkham. *4th Assts.:* Anna W. Clark, Mary F. McDonald.

ON PROBATION. — *3d Asst.:* Evangeline Clark.

LEWIS DISTRICT (Boys and Girls).

GRAMMAR SCHOOL. — Greatest whole number belonging, 758. Average whole number belonging, 745. Entitled to 14 teachers; 14 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 491. Entitled to 9 teachers; 10 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *2d Asst.:* Mary H. Thompson. *3d Asst.:* Grace M. Clark.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Mary L. Green, Grace L. Sherry. *4th Asst.:* Edith A. Willey.

ON PROBATION. — *3d Asst.:* Annie A. Maguire.

MARTIN DISTRICT (Boys and Girls).

GRAMMAR SCHOOL. — Greatest whole number belonging, 367. Average whole number belonging, 355. Entitled to 7 teachers; 8 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 217. Entitled to 4 teachers; 4 employed.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Grace C. Dillon.

ON PROBATION. — *4th Asst.:* Mary V. Gormley.

EIGHTH DIVISION.

AGASSIZ DISTRICT (Boys).

MMAR SCHOOL. — Greatest whole number belonging, 504. Average number belongi ng, 453. Entitled to 9 teachers; 10 employed.

IARY SCHOOLS. — Greatest whole number belonging, 244. Entitled to ers; 4 employed.

SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *Sub-* : Arthur Stanley. *3d Asst.:* Josephine A. Slayton.

TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Mary A. Cooke, Caro- Poole, Alice B. White. *4th Asst.:* Annie V. Lynch.

PROBATION. — *3d Asst.:* Mary H. McCready.

BENNETT DISTRICT (Boys and Girls).

MMAR SCHOOL. — Greatest whole number belonging, 525. Average number belonging, 502. Entitled to 9 regular teachers, 1 special; 10 ed.

IARY SCHOOLS. — Greatest whole number belonging, 389. Entitled to ers; 7 employed.

SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *3d* : Annie M. Stickney, Mary E. Winn. *4th Asst.:* Leslie D. Hooper.

TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Rose S. Havey, Fannie . *4th Asst.:* Anne Neville.

PROBATION. — *Sub-Master:* William C. Crawford. *3d Asst.:* Edith es.

BOWDITCH DISTRICT (Girls).

MMAR SCHOOL. — Greatest whole number belonging, 483. Average number belonging, 469. Entitled to 9 teachers; 9 employed.

IARY SCHOOLS. — Greatest whole number belonging, 552. Entitled to hers; 10 employed.

SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *2d* Nellie I. Lapham. *2d Asst., Primary School:* E. Augusta Randall.

TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Cora B. Mudge. *4th* Ellen E. Foster.

PROBATION. — *3d Asst.:* Delia M. U. Chapman. *2d Asst., Primary* : Margaret E. Winton. *4th Asst.:* Alice Greene.

CHARLES SUMNER DISTRICT (Boys and Girls).

MMAR SCHOOL. — Greatest whole number belonging, 749. Average number belonging, 735. Entitled to 13 teachers; 13 employed.

IARY SCHOOLS. — Greatest whole number belonging, 653. Entitled to hers; 12 employed.

SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *1st* Angeline P. Nutter. *2d Asst.:* Lina S. Weld. *4th Asst.:* Mary N. rne.

TERM ENDING AUGUST 31, 1895. — *Sub-Master:* Alaric Stone. *3d* : Emma Burrows, Mary P. Crosby, C. Emma Lincoln, Margaret F. n. *4th Assts.:* Katharine M. Coulahan, Martha W. Hanley, Anna M.

PROBATION. — *3d Asst.:* Rachel U. Cornwell. *4th Assts.:* Elizabeth ivogel, Helen F. Lambert.

LOWELL DISTRICT (Boys and Girls).

MAR SCHOOL. — Greatest whole number belonging, 827. Average umber belonging, 737. Entitled to 15 teachers; 14 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 952. Entitled to 17 teachers; 17 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *Sub-Master:* Edward P. Sherburne. *2d Asst., Primary School:* Ella F. Howland. *4th Asst.:* Rose A. Mohan.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Ellen M. Farrell, Mary W. Howard, Sarah A. Lyons. *4th Assts.:* Mary C. Crowley, Lillian G. Greene, Georgia L. Hilton, Lillian S. Hilton, Martha C. McGowan, Flora J. Perry, Carrie A. Waugh, Jane J. Wood.

ON PROBATION. — *4th Asst.:* Alice E. Thornton.

ROBERT G. SHAW DISTRICT (BOYS AND GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 278. Average whole number belonging, 274. Entitled to 5 teachers; 7 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 194. Entitled to 4 teachers; 5 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *3d Asst.:* Marian A. McIntyre. *4th Asst.:* Anna R. French.

FOR TERM ENDING AUGUST 31, 1895. — *4th Assts.:* Mary Butler.

ON PROBATION. — *4th Asst.:* Florence I. Reddy.

WASHINGTON ALLSTON DISTRICT (BOYS AND GIRLS).

GRAMMAR SCHOOLS. — Greatest whole number belonging, 822. Average whole number belonging, 814. Entitled to 15 teachers; 14 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 660. Entitled to 12 teachers; 11 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *4th Asst.:* Agnes A. Aubin.

FOR TERM ENDING AUGUST 31, 1895. — *3d Assts.:* Emily C. Brown, Margaret C. Hunt, Harriet Rice. *4th Assts.:* Lydia E. Stevenson, Edith S. Wyman.

ON PROBATION. — *3d Assts.:* Mary E. O'Neill, Ida F. Taylor. *4th Asst.:* Grace E. Nickerson.

NINTH DIVISION.

EDWARD EVERETT DISTRICT (BOYS AND GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 677. Average whole number belonging, 665. Entitled to 11 regular teachers, 1 special; 12 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 506. Entitled to 9 teachers; 9 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *3d Asst.:* Harriet A. Darling. *4th Asst.:* Fanny Frizzell.

FOR TERM ENDING AUGUST 31, 1895. — *4th Assts.:* C. Margaret Browne, Mary E. Irwin.

ON PROBATION. — *3d Assts.:* Alice E. Aldrich, Mary H. Chapman, Florence A. Goodfellow, Agnes G. Wright. *4th Asst.:* Mary G. Ellis.

GIBSON DISTRICT (BOYS AND GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 435. Average whole number belonging, 423. Entitled to 8 teachers; 8 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 376. Entitled to 7 teachers; 6 employed.

To serve during the pleasure of the School Committee. — *3d Assts.:* Jessie C. Fraser, Annie H. Pitts.

For term ending August 31, 1895. — *3d Assts.:* Emily A. Evans, E. Leora Pratt. *4th Assts.:* Bessie C. Jones, Joanna G. Keenan.

On Probation. — *4th Asst.:* Annie E. Briggs.

HARRIS DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 376. Average whole number belonging, 367. Entitled to 7 teachers; 8 employed.

Primary Schools. — Greatest whole number belonging, 320. Entitled to 6 teachers; 6 employed.

For term ending August 31, 1895. — *4th Asst.:* Louise Robinson.

On Probation. — *1st Asst.:* L. Gertrude Howes. *3d Asst.:* Gertrude D. Kean. *4th Assts.:* Jane T. Cook, Mary E. Wilbar.

HENRY L. PIERCE DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 717. Average whole number belonging, 690. Entitled to 12 regular teachers, 1 special; 13 employed.

Primary Schools. — Greatest whole number belonging, 401. Entitled to 7 teachers; 7 employed.

To serve during the pleasure of the School Committee. — *3d Assts.:* Anna S. Coffey. *4th Asst.:* Anna B. Badlam.

For term ending August 31, 1895. — *3d Assts.:* Anna K. Barry, Mary L. Merrick, Elizabeth L. B. Stearns. *4th Assts.:* Keziah J. Anslow, Louise L. Carr, Florence C. Pond.

On Probation. — *1st Asst.:* George W. Ransom. *3d Assts.:* Mary A. Crafts, Margaret Downey. *2d Asst., Primary School:* Mary E. Nichols. *4th Asst.:* Flora C. Woodman.

MATHER DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 753. Average whole number belonging, 709. Entitled to 13 regular teachers, 1 special; 13 employed.

Primary Schools. — Greatest whole number belonging, 669. Entitled to 12 teachers; 12 employed.

To serve during the pleasure of the School Committee. — *3d Assts.:* Elenora R. Clare, Clara G. Hinds, Carrie F. Parker.

For term ending August 31, 1895. — *1st Asst.:* Marietta S. Murch. *2d Asst.:* Annie L. Bennett. *3d Assts.:* Isabel W. Davis, Mary H. Knight. *2d Asst., Primary School:* Clara A. Jordan. *4th Assts.:* Lillian B. Blackmer, Elizabeth A. Grant, Alice L. Reinhard.

On Probation. — *3d Asst.:* Annie E. Hoss. *4th Assts.:* Grace O. Allen, Ruth E. Browne, Bertha E. Dennis.

MINOT DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 323. Average whole number belonging, 315. Entitled to 6 teachers; 7 employed.

Primary Schools. — Greatest whole number belonging, 223. Entitled to 4 teachers; 4 employed.

For term ending August 31, 1895. — *3d Asst.:* Mary E. Palmer. *4th Asst.:* Edna A. Hill.

On Probation. — *4th Asst.:* Harriet B. Hight.

STOUGHTON DISTRICT (Boys and Girls).

Grammar School. — Greatest whole number belonging, 292. Average whole number belonging, 287. Entitled to 5 teachers; 6 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 230. Entitled to 4 teachers; 5 employed.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE. — *4th Asst.:* H. Adelaide Sullivan.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Annie M. McMahon. *4th Asst.:* Edith M. Martine.

ON PROBATION. — *4th Assts.:* Mary M. Dacey, Janet B. Halliday.

TILESTON DISTRICT (BOYS AND GIRLS).

GRAMMAR SCHOOL. — Greatest whole number belonging, 142. Average whole number belonging, 134. Entitled to 3 teachers; 3 employed.

PRIMARY SCHOOLS. — Greatest whole number belonging, 88. Entitled to 2 teachers; 2 employed.

FOR TERM ENDING AUGUST 31, 1895. — *3d Asst.:* Emeline W. Ripley.

ON PROBATION. — *4th Asst.:* Louisa W. Burgess.

KINDERGARTENS.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE.

SECOND DIVISION.

Polk street. — Daisy G. Dame, *Principal.*

THIRD DIVISION.

Sharp School. — Sarah E. Kilmer, *Assistant.*

FOURTH DIVISION.

Hudson street. — Adelaide B. Camp, *Principal.*

FIFTH DIVISION.

Cook School. — Lucy Kummer, *Principal.*

SEVENTH DIVISION.

Cottage place. — Annie S. Burpee, *Principal.*
Smith street. — Caroline D. Aborn, *Principal.*
Byron court. — M. Elizabeth Watson, *Principal.*

EIGHTH DIVISION.

Union street. — Kate A. Duncklee, *Assistant.*

NINTH DIVISION.

Neponset. — Mary B. Morse, *Principal.*

FOR TERM ENDING AUGUST 31, 1895.

FIRST DIVISION.

Adams School. — Cora E. Bigelow, *Principal.* Helen J. Morris, *Assistant.*
Tappan School. — Josephine H. Calef, *Assistant.* (On Probation.)

Noble School. — Helen A. Ricker, *Assistant.* (On Probation.)
Webb School. — Bertha M. Smith, *Principal.* (On Probation.) Carrie A. Granger, *Assistant.* (On Probation.)

SECOND DIVISION.

B. F. Tweed School. — Gertrude F. Chamberlain, *Principal.* Grace H. Skilton, *Assistant.*
Common street. — Elizabeth E. Henchey, *Assistant.*
Polk street. — Phebe A. DeLande, *Assistant.*

THIRD DIVISION.

North Bennet street. — Alice S. Brown, *Assistant.* (On Probation.) Ellen M. Murphy, *Assistant.*
Cushman School. — Mary Wall, *Assistant.*
North Margin street. — Eliza A. Maguire, *Assistant.*
Parmenter street. — Esther F. McDermott, *Principal.* (On Probation.)
Baldwin School. — Caroline M. Burke, *Assistant.*
Winchell School. — Caroline C. Voorhees, *Principal.* Mae K. Pillsbury, *Assistant.*
38 Chambers street. — Ada C. Williamson, *Principal.* (On Probation.)

FOURTH DIVISION.

Warrenton street. — Etta D. Morse, *Principal.* (On Probation.) Lillian B. Poor, *Assistant.* (On Probation.)
St. Botolph street. — Gertrude L. Kemp, *Assistant.*
Hudson street. — Mary H. Fruean, *Assistant.*

FIFTH DIVISION.

Rutland street. — Eleanor P. Gay, *Principal.* (On Probation.)
Joshua Bates School. — Ella T. Burgess, *Principal.* Edith S. Emery, *Assistant.* (On Probation.)
Concord street. — Louise M. Davis, *Assistant.*
Cook School. — Gertrude L. Watson, *Assistant.* (On Probation.)
Ruggles street. — Hetty B. Row, *Assistant.*

SIXTH DIVISION.

Howe School. — Frances H. Thompson, *Assistant.*
Shurtleff School. — Bertha F. Cushman, *Principal.* (On Probation.) Edith C. Gleason, *Assistant.*
Thomas N. Hart School. — Mabel L. Yates, *Assistant.*
John A. Andrew District. — Maud W. Souther, *Principal.* (On Probation.) Amelia J. Burrill, *Assistant.* (On Probation.)

SEVENTH DISTRICT.

Smith street. — Ellen M. Fiske, *Assistant.*
Phillips street. — Gertrude A. Rausch, *Principal.* (On Probation.)
Yeoman street. — Mabelle McQ. Winslow, *Assistant.*
Kenilworth street. — Florence A. Fitzsimmons, *Assistant.* (On Probation.)
7 Byron court. — Sarah L. Marshall, *Assistant.* (On Probation.)
George street. — Martha Currier, *Principal.* (On Probation.)

EIGHTH DIVISION.

Everett School. — Helena P. Stacy, *Principal.* Lilian Hooper, *Assistant.* (On Probation.)

Margaret Fuller School. — Ida E. McElwain, *Assistant.*
Hillside School. — Mabel S. Apollonio, *Principal.* (On Probation.) Sara K. Savary, *Assistant.* (On Probation.)

NINTH DIVISION.

Bartley street. — Minnie G. Abbott, *Assistant.*
Lyceum Hall. — Milla H. Temple, *Assistant.*
Neponset. — Sarah T. Whitmarsh, *Assistant.*
River street. — Alice D. Hall, *Principal;* Kate S. Gunn, *Assistant.* (On probation.)

HORACE MANN SCHOOL.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE.

Assistant Principal. — Ella C. Jordan.

FOR TERM ENDING AUGUST 31, 1895.

Assistant. — Mary M. Beale.

SCHOOL ON SPECTACLE ISLAND.

For term ending August 31, 1895. — Gilbert F. Ordway. (On Probation.)

MANUAL TRAINING.

Manual Training Schools.

FOR TERM ENDING AUGUST 31, 1895.

Principal of Manual Training Schools. — Frank M. Leavitt.
Assistant Instructors. — Edwin E. McCready, Ella G. Smith, J. Herman Trybom.
ON PROBATION. — *Assistant Instructors:* Alexander Miller, Anna M. Pond, Helen I. Whittemore.

Schools of Cookery.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE.

Instructor: Althea W. Somes.

FOR TERM ENDING AUGUST 31, 1895.

Instructors. — Ellen L. Duff, Mary C. Mitchell, Josephine Morris, Julia M. Murphy, Mary A. Tilton, Emeline E. Torrey, Angeline M. Weaver.
ON PROBATION. — *Instructors:* Grace H. Bartlett, Ellen B. Murphy.

SPECIAL INSTRUCTORS.

TO SERVE DURING THE PLEASURE OF THE SCHOOL COMMITTEE.

Special Instructor of Music. — Leonard B. Marshall.

FOR TERM ENDING AUGUST 31, 1895.

Assistant to Director of Drawing. — Henry W. Poor.
ON PROBATION. — *Assistant Instructors of Music:* Sarah C. Carney, Rose A. Carrigan, Susan H. Hall, Laura F. Taylor.

INSTRUCTORS IN SEWING.

FOR TERM ENDING AUGUST 31, 1895.

Catherine L. Bigelow, Sarah J. Bray, Annie E. Brazer, Harriet E. Browne, Helen L. Burton, Catherine J. Cadogan, Eliza M. Cleary, Susan M. Cousens, Isabella Cumming, Kate A. Doherty, Martha F. French, Olive C. Hapgood, Mary E. Jacobs, Margaret A. Kelly, Lizzie S. Kenna, Mary J. McEntyre, Annie S. Meserve (on Probation), Catherine C. Nelson, Sarah H. Norman, Mary E. Patterson, Elizabeth A. Power, M. Elizabeth Robbins, Julia A. Skilton, Sarah A. Stall, Frances E. Stevens, Lizzie A. Thomas, Emma A. Waterhouse, Emma G. Welch (on Probation), Ella Whiting (on Probation), Ellen M. Wills, Esther L. Young.

SCHOOL DOCUMENT NO. 7 — 1894.

REPORT

OF THE

SPECIAL COMMITTEE

ON THE

DUTIES OF THE OFFICERS OF THE BOARD.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

In School Committee, Boston, June 12, 1894.

Ordered, That the Special Committee on Duties of Officers be authorized to report in print.

Attest:

PHINEAS BATES,
Secretary.

REPORT.

IN SCHOOL COMMITTEE, BOSTON, June 12, 1894.

Your Committee, to whom was referred the question, "What, if any, changes in the duties of the officers of the Board should be made to render the administration of our schools more effective?" have attended to their duty and desire to report as follows:

In the performance of this duty your Committee have held numerous meetings, and consulted various authorities, whose knowledge of our schools has rendered their testimony of great value to the Committee in determining the true condition of our schools at the present time, and in shaping conclusions in regard to the question submitted for their consideration.

As a result of these deliberations your Committee are privileged to express their sincere admiration for the public schools of our city, as at present organized.

Embracing in their fostering care the children of many nationalities, and employing, as they do, a corps of instructors of unsurpassed ability, these schools, we believe, are justly entitled to the enviable reputation which, during many years of their existence, they have enjoyed.

But this success has been achieved, as your Committee have discovered, in the face of limitations of administration which would have sorely tried any school system in the hands of less able supporters, and which have prevented their advancing to a higher place of excellence toward which educational ambition is now pointing, and to which, we believe, under more favorable conditions, they may easily attain.

The limitations to which we refer have arisen, as we find, from a conscientious interpretation by the School Committee in past years of the duties imposed upon them by the law which makes this Board wholly responsible for the administration of the public schools of our city. This responsibility has been construed as rendering it obligatory on members of the Committee not only to give attention to affairs of legislation, but also to largely assume executive functions in the educational departments of school-work. This has been demonstrated by the manner in which the management of special departments has been placed in the hands of sub-committees, who, in the absence of any general executive agent of the Board, have carried on the work of these departments, even to the minutest details, at a sacrifice of time and attention that ought not to be expected of members of the School Committee.

As a natural consequence this method of procedure has, at times, resulted in confusion in the interests of different departments, and hence has been something of an obstacle in the way of harmonious operations in the general work of the schools. If the School Committee ever intended to confer any considerable executive authority on any of its professional agents, it does not so appear in the Rules and Regulations of the Board.

Under these rules, while the Superintendent is directed to inform himself in regard to the public-school system in general and on the condition of the schools of the city of Boston in particular, no means are provided whereby he shall be systematically supplied with information touching the educational operations of the several schools supposed to be under his care. Nobody reports to him on these matters. No system of reports from masters, Supervisors, or special instructors is at his command. It is true he has access to reports of special committees and those made by Supervisors to the Board, but he has no one whom he can authori-

tatively detail to look up facts needed for any special purpose, and, wanting information of this kind, he has only to betake himself personally to the school or locality where inquiry is to be made.

On statistical matters he has full information, and facts concerning these he conveys to the Board in his annual reports. He is impowered to determine the form of registers, record-books, blanks, and cards used in the schools; to consult with those who have control in building or altering school-houses; to hold occasional meetings of the teachers, and for this purpose to dismiss the Grammar Schools one half-day each term and the Primary Schools two half-days in each term; and, finally, to decide when there shall be but one session of the Grammar and Primary Schools, on account of stormy weather.

The only executive authority here given, it will be seen, is that of dismissing schools on account of teachers' meetings or of stormy weather.

Again, in the Rules concerning the duties of the Board of Supervisors, we find no actual executive authority conferred on the members of that Board.

The numerous and exacting duties set forth in the Rules contain no suggestion of independence of action, but are to be performed by the Supervisors under the direction of the School Committee.

It may be said, however, that Section 163 of the Rules and Regulations, referring to the duties of the Superintendent, does confer upon him a large degree of executive power, since it reads as follows:

"He [the Superintendent] shall be responsible to the School Board as the executive in the department of instruction over all Supervisors, principals, and other instructors." But Section 170 of the Rules also reads as follows: The Board of Supervisors shall be the Executive Board of the School Committee, and as such may be called upon to per-

orm any of the duties of the School Committee, except such as are legislative in their character."

Now, here are two distinct grants of executive authority which, if exercised, would be productive of trouble. But no difficulty seems ever to have arisen from this cause, simply because the power thus suggested was expeditiously withdrawn by the last sentence of Section 170, which reads as follows: "But neither the Superintendent nor the Supervisors shall have any authority over, or direction of, the principals, or other instructors, except as provided by the Board in regulations or otherwise." This is conclusive, and it seems that the School Committee has not considered it wise to confer executive authority on any of its professional agents.

But your Committee is persuaded that the time has come when the office of Superintendent of the Public Schools of Boston should be elevated to a position of dignity and responsibility commensurate with its significance and importance. No longer should its incumbent be held in undignified subordination. Rather let him be placed as the true executive head of the schools, responsible to the School Committee and to the public for the successful operation of the department of instruction committed to his care. Let Section 163 of the Rules be reaffirmed, with no disabling addendum, and declare that the Superintendent "shall be the executive head of the department of instruction over all Supervisors, principals, and other instructors." Your Committee also believe that the Supervisors should be relieved of some of the duties which have hitherto so largely engaged their time and attention, and assigned to higher and more important work suited to their ability and educational experience.

The duty heretofore imposed upon the Supervisors of visiting all of the schools, and once a year examining each teacher's method of conducting a school, noting the results

of the examination in the private records of the School Board, has not, in the judgment of the Committee, yielded results commensurate with the time expended, since a single visit in a year can hardly be considered a fair test of a teacher's ability or general success, and it is regarded in many cases as quite unnecessary, since the master of each school, who is a constant observer of the work of each teacher, and who feels the results in the classes as they move forward, is best fitted to testify as to each teacher's qualifications.

Relieved of a large share of this duty, the Board of Supervisors, with the Superintendent as its chairman, should constitute the Advisory Board of the School Committee, to whom all questions in regard to courses of study, text-books, discipline, or other matters, coming before the School Committee, should be first submitted for consideration and study, and whose conclusions, opinions, and advice, furnished in advance of debate by the Board, would be of great service to the School Committee in the discharge of its legislative duties. The Board of Supervisors should be authorized to suggest to the School Committee such improved methods as their observation may incline them to believe to be worthy of adoption in the schools.

It will be seen that while large advisory powers will thus be conferred on the Board of Supervisors, the School Committee will be relieved of no portion of the responsibility heretofore resting upon it in determining the policy to be adopted in the administration of the schools. Subcommittees, as now, will have general supervision of special branches of instruction in the schools, looking more particularly to results, while the details of the work will be carried on under the direction of the special instructors in the departments, themselves a part of the great machinery, moving harmoniously under the guiding hand of the Superintendent.

It will be observed that, having discharged their duty as a Board, the members of the Board of Supervisors, as individuals, will enter the executive field under the direction of the Superintendent, each being assigned to a district, where, relieved of much of the duty of examining individual teachers, heretofore devolving upon them, and associated with the several masters of the district in which they are located, they will be able to study the progress and needs of the schools, and lend encouragement and aid to the work in which all are engaged.

It will further be noted that the plan proposed will do away with numerous reports on various subjects coming to the School Committee and cause these to be made to the Superintendent, who, out of the fund of information thus obtained, will be able to give to the Committee, annually or oftener, a thoroughly digested report of the operations of the schools in all departments.

Such reports as these, it is believed, will be welcomed by the public as concise and readable documents, in which they will take a deep interest.

To inaugurate this form of administration the School Committee have only to make certain changes in the Rules and Regulations of the Board, and these are presented herewith for consideration. All of which is respectfully submitted.

BENJAMIN B. WHITTEMORE, *Chairman.*
JAMES A. McDONALD,
LALIAH B. PINGREE,
RICHARD C. HUMPHREYS,
ISAAC F. PAUL.

Ordered, That the Rules and Regulations be amended as follows:

SECTION 48. Strike out all after the word "September" in the fourth line, so that the section will read:

"*Sect. 48.* The Committee on Drawing shall have the general supervision of this branch of instruction in all the schools. They shall make a written report to the Board in September."

[The Director of Drawing and his assistant, under the present section, perform their duties under the direction of the Committee on Drawing. It is proposed that these instructors shall hereafter perform their duties, which are assigned to them by the Board, under the direction of the Superintendent. This change does not imply any alteration of the duties of the Committee on Drawing, but is to enable the Superintendent to be informed of the work of these instructors, and to see that their duties are faithfully performed. The changes in Sections 49, 53, are suggested for similar reasons in the departments of Music and Hygiene and Physical Training.]

SECT. 49. Strike out all after the word "September" in the fourth line, so that the section will read:

"*Sect. 49.* The Committee on Music shall have the general supervision of this branch of instruction in all the schools. They shall make a written report to the Board in September."

SECT. 50. Strike out in the fourth and fifth lines the words "and the care and management of the schools for manual instruction," so that the section will read:

"*Sect. 50.* The Committee on Manual Training shall have the general supervision of the instruction in wood-working, sewing, cooking, and other branches of manual training in all the schools. They shall make a written report to the Board in September."

SECT. 51. Strike out the words "care and management"

in the second line and insert in place thereof the words "general supervision," so that the section will read:

"*Sect. 51.* The Committee on the Horace Mann School for the Deaf shall have the general supervision of the institution of this name. Annually, in the month of September, they shall submit to the Board a written report of the condition of the school."

[The changes in Sections 50 and 51 are to provide that the language used shall conform to that in other sections relating to the duties of committees.]

SECT. 53. Strike out in the second and third lines the words "instruction in" and insert in place thereof the words "subjects of." Strike out all after the word "September" in the first line, page 13, so that the section will read:

"*Sect. 53.* The Committee on Hygiene and Physical Training shall have the general supervision of the subjects of hygiene and physical training in all the schools. They shall make a written report to the Board in September."

[The first amendment is suggested so as to provide that the duties of the Committee on Hygiene and Physical Training shall include not only the general supervision of the instruction in these subjects, but all matters which relate to the physical condition and health of the pupils. The second amendment is described in note under proposed amendment to Section 48.]

SECT. 57. Strike out in the second line the words "care and management," and insert in place thereof the words "general supervision," so that the section will read:

"*Sect. 57.* The Committee on Kindergartens shall have the general supervision of all schools of this name and character which are supported by the city, with the exception of the Training School Kindergarten. They shall make a written report to the Board in September."

[To provide that the language used in the section shall conform to that used in similar sections.]

SECT. 75. Strike out in the fifth and sixth lines, page 15, the words "and the Annual Report of the Board of Supervisors."

[Section 75 relates to the Annual School Report. The present section provides that the report shall contain the annual report of the Board of Supervisors. As it is proposed to discontinue the annual report of that Board, this change is suggested.]

SECT. 84. Substitute in the eighth line the word "department" for the word "supervisors," so that the section will read:

"*Sect. 84.* Annually, in the month of May, the Committee on the Normal School, the Committee on High Schools, each Division Committee, and committees in charge of special schools and subjects, except those of the Evening Schools and Evening Drawing Schools, shall canvass the lists of teachers of the several schools, districts, and subjects under their charge, and, after consulting the records of the department, and conferring with the principals, shall recommend to the Committee on Nominations such regularly confirmed subordinate teachers as have served acceptably during the whole or any part of the current school-year, and who have not been elected for a tenure of office during good behavior and efficiency, for reëlection," etc.

[All records which would be of assistance to committees in their annual canvass of teachers should be consulted.]

SECT. 86. Strike out in the first line the words "the Superintendent or." Substitute in the ninth line the word "said" for the words "the Superintendent." Insert after the words "in writing," in the eleventh line, the words "to the Superintendent, who shall report in writing," so that the section will read:

"*Sect. 86.* Whenever a Supervisor is satisfied that a principal or other instructor has become inefficient or incompetent to fill the position to which such instructor has been elected, or is unfaithful in the discharge of the

duties thereof; and whenever a principal is satisfied that a subordinate teacher in his school or district has become inefficient or incompetent to fill the position to which such instructor has been elected, or is unfaithful in the discharge of the duties thereof; said Supervisor or principal shall promptly report the same, in writing to the Superintendent, who shall report in writing to the committee in charge of the school, district, or subject taught by such instructor. The committees in charge shall immediately investigate the cases referred to them under the provisions of this section, and if satisfied that such instructors are unsuitable for their positions, they shall, within two months from the time of reference, report the facts in writing to the Board, and such instructors may be removed by the Board."

[The purpose of this amendment is to provide that the Superintendent shall be informed of all propositions to dismiss a teacher, and to secure proper records of all such matters.]

SECT. 93. Strike out all after the word "supervisors" in the eighth line to and including the words "of such teachers" in the eighteenth line, and insert in place thereof the following words: "After a teacher has been appointed on probation, the principal of the school, and one or more supervisors assigned by the Superintendent, shall examine his work in the class-room and report the results of said examinations in writing to the Superintendent, who shall transmit the same, with such recommendations as he may deem advisable, to the committee in charge." Strike out in the twenty-second line the words "in consultation with the Board of Supervisors," so that the section will read:

"*Sect. 93.* All regular instructors, and all special instructors in day schools, not elected by ballot, shall be nominated to the Board on probation; and they shall be entitled to the established salary from the time of entering upon their duties, but they shall not be confirmed until after a satisfactory trial of one year. No nomination shall bear a

date previous to the date of the certificate of qualification issued to the nominee by the Board of Supervisors. After a teacher has been appointed on probation, the principal of the school, and one or more supervisors assigned by the Superintendent, shall examine his work in the class-room, and report the results of said examinations in writing to the Superintendent, who shall transmit the same, with such recommendations as he may deem advisable, to the committee in charge. The committee in charge, after examining these reports, shall recommend teachers on probation, if found competent, for confirmation, in the manner required for nomination on probation. The committee in charge, for satisfactory reasons, may extend the time of probation, or may recommend to the Board for removal any subordinate teacher on probation who, before the expiration of the year of probation, is found to be incompetent or unsuitable for his position," etc.

[The purpose of these changes is to provide that the Superintendent shall be informed of the work of teachers on probation, and to secure the prompt transmission of the reports, together with such recommendations as the Superintendent may deem desirable, to the committee in charge.]

SECT. 155. Substitute the word "The" for the word "A," in the first line. Strike out in the fifth and sixth lines the words, "His salary shall be fixed at the same meeting and at least thirteen votes shall be required for an election." Renumber the section 154, so that the section will read:

"*Sect. 154.* The Superintendent of Schools shall be elected in the month of June, 1894, and biennially thereafter, who shall hold his office for the term of two years from the first day of September in the year of his election."

[The salary of the Superintendent is fixed as that of all other officers until otherwise ordered by the Board, and these words are unnecessary. The law provides the number of votes required for an election of the Superintendent, and there is therefore no need of stating this in the regulation.]

Insert the following:

"SECT. 155. The Superintendent shall be responsible to the School Board, as the executive in the department of instruction over all supervisors, principals, and other instructors. He shall see that all regulations of the public schools, and all orders of the School Committee concerning the supervision, instruction, and management of the schools, and all votes of the Board of Supervisors which are valid under the legislation of the School Committee, are executed. He shall divide among the several supervisors, as equally as practicable, the work of inspecting and examining the schools. He shall assign each supervisor a group of schools, and one or more departments of study throughout all the schools of the city."

[This section as proposed includes the duties contained in present Sections 162 and 163 condensed.]

SECT. 156. Add the following words to the section: "He may report to the Board, or its committees, any violation or neglect of the regulations," so that the section will read:

"*Sect. 156.* He shall devote himself to the study of the public-school system, and keep himself acquainted with the progress of instruction and discipline in other places, in order to suggest appropriate means for the improvement of the public schools in this city, and he shall see that the regulations of the Board in regard to these schools are carried into full effect. He may report to the Board, or its committees, any violation or neglect of the regulations."

[The purpose of this change is to secure a closer observance of the regulations.]

SECT. 160. Strike out in the fourteenth, fifteenth, and sixteenth lines the words "and the report for each year shall be referred to the special committee upon the annual report."

[The duties of the Superintendent are so changed that he is

brought into closer connection with the committees tl
fore. In the first part of Section 160 it is provided tha
propose to the Board, or its committees, such legislatic
the schools as he may deem necessary." There a
reason for continuing this obsolete provision in this sec

SECT. 162. Substitute the following:

"*Sect. 162.* Subject to the approval of the Con
Examinations, he shall have power to order a spec
examination of any class in the schools, whenever
it necessary. In schools of like grade, written ex
shall be conducted at the same time in each study
the same questions previously adopted by the
Supervisors."

[This section contains so much of the present Section
not been incorporated in the proposed Section 155, witl
explanation of how such examinations are to be conduc

SECT. 163. Substitute the following:

"*Sect. 163.* All directors and special instr
special subjects shall perform such duties as ar
them by the Board under the direction of the Su
ent."

[See proposed amendment to Section 48.]

CHAPTER XIII.

[The changes suggested in this chapter are for the
carrying out the general plan submitted by the committ

Substitute for the heading of the chapter the foll
"Duties of the Board of Supervisors."

SECT. 170. Substitute the following:

"*Sect. 170.* In the month of June, 1894, and
thereafter, the School Committee shall elect by
exceeding six supervisors, who shall hold their offi
term of two years from the first day of Septem
year of their election."

SECT. 171. Substitute the following:

"*Sect. 171.* The Board of Supervisors shall be
ory Board of the School Committee."

SECT. 172. Substitute the following:

"*Sect. 172.* The Board of Supervisors shall consider and report upon such matters as may be referred to it by the School Committee or its committees. The Board of Supervisors may also propose to the School Committee or its sub-committees such legislation concerning the schools as it (the Board of Supervisors) may deem necessary. All reports or propositions of the Board of Supervisors shall be transmitted through the Superintendent."

SECT. 173. Strike out the section.

[It is proposed that the duties of the supervisors as contained in this section are to be performed hereafter under the direction of the Superintendent, and do not therefore properly belong to this chapter.]

SECT. 174. Strike out the section.

[As it is proposed that the Superintendent shall make the only annual report required from Superintendent and supervisors, this section is unnecessary.]

SECT. 175. Renumber the section 173.

[As the policy of the Board with regard to diploma examinations has not been definitely determined, the committee suggest no changes in this section at present.]

SECT. 176. Substitute in the thirteenth line the word "Superintendent" for the words "Board of Supervisors." Insert after the word "may" in the fourteenth line the word "also." Strike out the word "also" in the sixteenth line. Renumber the section 174, so that the section will read:

"*Sect. 174.* Annually in the month of June the Board of Supervisors, under the direction of the Committee on Examinations, shall superintend the examination of the first classes of the Primary Schools. This examination shall be both oral and written, upon questions indicated by the Board of Supervisors, and shall be conducted by the principals of the districts. The results of these examinations,

together with their recommendations for promotion to the Grammar Schools, shall be submitted to the Committee on Examinations, who, after approving them, shall order the promotions to be made. With the approval of the Committee on Examinations, and under the direction of the Superintendent, promotions from the Primary to the Grammar Schools may also be made on the first Monday in February, by the supervisors of those schools in consultation with the principals thereof. Promotions of individual pupils may be made at any time by the principal of the district, with the approval of the Supervisor in charge."

[It is proposed that the Superintendent shall be the executive officer of the Board, and as such this duty should devolve upon him.]

SECT. 177. Substitute the following:

"*Sect. 175.* Under the direction of the Committee on Examinations the Board of Supervisors shall determine the proper standards to be attained by each class in the several studies of the authorized course, and the best methods to be pursued in reaching them. The principals of schools shall use the general methods of instruction which are approved by the Committee on Examinations, referring all questions of interpretation which may arise to that committee, through the Board of Supervisors."

[The changes suggested in this section are for the same reasons as for those in Section 173.]

SECTS. 178 to 184 inclusive. Renumber the sections 176 to 182 respectively.

SECTS. 185, 186, 187, and 188. Strike out these sections.

[These sections relate to the duties of individual supervisors, and these duties are provided for in other sections proposed.]

Insert the following as Chapter XIV., and renumber succeeding chapters to conform to this change.

CHAPTER XIV.

Duties of the Supervisors.

[The changes suggested are to conform to the general plan submitted by the committee.]

SECT. 187. The supervisors, when not acting as a board, shall perform their duties under the direction of the Superintendent.

SECT. 188. The supervisors, under the direction of the Superintendent, shall visit all the schools, day and evening, as often as practicable, for the purpose of obtaining information regarding the efficiency of the teachers; the progress of the pupils; the observance of the regulations and courses of study; and the general condition of the schools. The results of such visits, with such remarks, recommendations, and suggestions as may seem desirable, shall be reported to the Superintendent in such manner and at such times as he shall prescribe. Such reports shall be kept on file in the Superintendent's office and open only to the inspection of the members of the Board.

SECT. 195. Substitute the following:

"*Sect. 195.* Each principal shall make a monthly report to the Superintendent, on blanks furnished for the purpose, on or before the fifth school day of the month following that covered by such report. In these reports the principals shall express their opinion of the teaching and governing ability of such substitutes, temporary teachers, and special assistants as have been employed in the course of the month who have served for terms longer than two weeks. The principals shall also state in these reports whether the services of the truant officers, assigned to their several districts, have been satisfactorily performed during the month covered by the report. The reports shall be prepared under the direction of the principals and signed by them, and shall be kept on file in the office of the Superintendent for the inspection of the members of the Board only."

[It is proposed that the Superintendent shall be the executive officer of the Board, and as such all reports should be made to him and not to the Board of Supervisors.]

SECT. 200. Substitute "Superintendent" for "Board of Supervisors" in the seventh and eighth lines, so that the section will read:

"*Sect. 200.* A principal may suspend a scholar from school for violent and pointed opposition to authority in any particular instance, or when the example of the pupil is very injurious, and in cases where reformation appears to be hopeless; but he shall immediately inform the committee in charge, and the parent or guardian, of action, and mention it in his next monthly report to Superintendent. If any scholar so suspended shall make satisfactory apology to the teacher or to the principal, the latter shall direct, and give promise of amendment, shall, with the consent of the committee in charge, be restated in the school."

SECT. 221. In the twelfth line, page 47, substitute word "Superintendent" for the words "Board of Supervisors." In the eighteenth line strike out the words "and the Board of," and insert in place thereof the words "Superintendent, and the," so that the section will read

"*Sect. 221.* All instructors shall endeavor to maintain such discipline in their schools as is exercised by a kind and judicious parent in his family, avoiding corporal punishment in all cases where good order can be preserved by mild measures; and in no case resorting to confinement in a closet or wardrobe, or to any cruel or unusual punishment. Corporal punishment shall be inflicted only after the nature of the offence has been fully explained to the scholar, and shall be restricted to blows on the hand with a rattan. At the close of the day each instructor shall report in writing to the principal all cases of corporal punishment during such day, stating the name of the pupil, the amount of the punish-

ment, and the reason for its infliction; and the principal shall mention the number of such cases in his monthly report to the Superintendent. The reports of cases of corporal punishment required by Sections 199 and 221 shall be made on blanks prepared for the purpose, and shall be preserved on file by the principal of each district for two years, at the end of which time they shall be destroyed. These reports shall be open to the inspection of members of the School Committee, the Superintendent, and the supervisors. Corporal punishment shall not be inflicted upon girls in Grammar Schools, or upon any scholars in the High Schools."

SECT. 284. Strike out the section and renumber the succeeding section to conform to the change.

[See note under proposed amendment to Section 48.]

SECT. 328. Substitute the following:

"*Sect. 328.* The principals shall make a monthly report to the Superintendent, on blanks furnished for the purpose, on or before the fifth day of the month following that covered by such report. The principal of each Evening School shall keep an exact record of the attendance of every pupil, and once each month shall report the same to the Superintendent, who shall notify the chairman of the committee in charge when the average number reported requires the discontinuance of any school, or the dismissal of any assistant."

[See note under proposed amendment to Section 195.]

SECT. 350. Substitute the following:

"*Sect. 350.* The principals shall make a monthly report to the Superintendent, on blanks furnished for the purpose, on or before the fifth day of the month following that covered by such report. The principal of each Evening Drawing School shall keep an exact record of the attendance of every pupil, and once each month shall report the same to the Superintendent, who shall notify the chairman of the committee in charge when the average number re-

ported requires the discontinuance of any school, or the dismissal of any assistant."

[This amendment is to provide for a more comprehensive monthly report from the principals of the Evening Drawing Schools.]

SECT. 247. (Old number, Sect. 362.) Insert after the word "placed" in the fourth line the following words: "who shall include in their monthly reports to the Superintendent such information as may be called for,"; substitute the words "The instructors" for the word "they" in the fourth line; so that the section will read:

"*Sect. 247.* Instructors of Kindergartens shall make reports to, and be under the care and direction of, the principals of the school districts in which they may be placed; who shall include in their monthly reports to the Superintendent such information as may be called for. The instructors shall be visited and reported upon by the supervisors; and in general shall be subject to the Rules and Regulations so far as applicable to them."

[This amendment is to provide for more definite information concerning these schools.]

Insert the following:

SECT. 374. Such records shall be kept and such reports shall be made to the Superintendent as he may prescribe.

[Heretofore we understand no records have been kept and no reports required from these schools. It is important that all information concerning the condition and work of the schools should be made available for reference.]

SECT. 385. Strike out all after the words "truant force" in the last line but one and insert in place thereof the words, "The truant officers shall perform their duties under the direction of the Superintendent," so that the section will read:

"*Sect. 385.* The several school districts having been so grouped together as to make the labors of the officers as nearly equal as possible, each truant officer shall be assigned

to one of these groups, and shall be held responsible under these regulations, and such regulations as the Committee on Truant Officers may from time to time prescribe, for the judicious and faithful discharge of the duties of his office. The Committee on Truant Officers shall appoint one of the officers, subject to the approval of the Board, as chief of the truant force. The Truant Officers shall perform their duties under the direction of the Superintendent."

[To conform to the general plan that the Superintendent shall be possessed of information concerning the schools.]

SCHOOL DOCUMENT NO. 8 — 189

REPORT

OF THE

DIRECTOR OF PHYSICAL TRAI

ADOPTED BY THE COMMITTEE ON HYGIENE
PHYSICAL TRAINING, AS ITS REPORT.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTEI
1894.

REPORT.

To the School Committee:

The present department of Physical Training owes its existence to the School Committee of 1889–90, which ordered, June 24, 1890: *that the Ling or Swedish system of educational gymnastics be introduced into all the public schools of this city.* The policy thus initiated was of necessity tentative, and still continues so. The wisdom of the vote referred to, and the success of the measures adopted for the purpose of carrying it into effect, cannot be fully and fairly estimated except in the light of the history of similar experiments made by the Boston School Committee in times past. Similarly no just and adequate judgment can be passed as to the importance and value of the results achieved by the Boston School Committee during the sixty years that have elapsed since it began experimenting with physical education, unless the most notable experiments of like nature elsewhere are taken into account. Furthermore, the value and success of any scheme for the advancement of any branch of physical training is conditioned upon: (1) the extent to which its promoters and managers give heed to the lessons of experience; and (2) the degree of fidelity with which they follow the plain teachings of proven science.

SCOPE OF FIRST REPORT.

Accordingly in my first report I endeavored to set forth and to characterize the principal events which have signalized the history of physical education in Christendom during

the nineteenth century; to describe in a general way the attempts that have been made in this country, — and more particularly in our own Commonwealth and city, — during the past seventy years, to make physical training a genuine and effective department of public and private education; and to give a connected account, in a somewhat detailed way, of the measures taken in relation to physical education by the Boston School Committee since 1833 (the date of its first enactment on the subject), so far as those measures could be determined from a study of the Committee's records and reports, and its rules and regulations. Attention was called to some of the fundamental teachings of modern science with regard to the nature and effects of systematic bodily exercise. The practical bearing of such teachings upon the problems we are endeavoring to solve was likewise adverted to, but not enlarged upon.

SCOPE OF PRESENT REPORT.

In the following pages, which constitute my second report, I desire to discuss somewhat more fully and particularly the principles of physical education in the light of physiological and psycho-physical science, in order that we may arrive at a clearer understanding of the close — nay, vital — relations which exist between physical and all other forms of education, and in order to establish a standard of measure which shall enable us to estimate the worth and weight of the results of our endeavors.

For the sake of presenting my material in what seems to me its proper consecutive order, I defer to the latter part of this report the account of my stewardship during the interval since December 31, 1891, the date of my last report, and those suggestions which have occurred to me as to the ways and means best calculated to secure the further and lasting efficiency and prosperity of this department.

BEGINNINGS OF PHYSICAL EDUCATION IN NEW ENGLAND.

The interest of New England educationists in the physical side of education had its flickering beginnings in the early twenties, and was due to the quickening influence of educational reform in Europe. During the decade ending in 1830, this interest, which was manifested chiefly by enterprising innovators in the domain of private secondary and superior education, exhausted itself in a few crude and practically fruitless experiments. Equally crude and fruitless were the attempts to make manual labor and training a forceful factor in liberal education. It was not until near the close of the decade 1850–1860 that any extensive revival of interest in the advancement of physical education declared itself.

LEWIS PERIOD.

In the period 1860–1866, which has been termed the Lewis or Light Gymnastic period, the teachers and managers of public schools, especially in New England, awoke, in a measure, to the clearly growing need of more effectual measures for promoting the health and vigor of the school population by means of gymnastic exercises. This awakening betokened a decided advance in public sentiment, since the movement of 1820–1830 had scarcely affected the public schools. This awakening gave rise to widespread enthusiasm and to numerous attempts to organize school gymnastics. Few, if any, of these attempts were intelligently planned and adequately organized; and most of them, through lack of efficient leadership or by reason of timid and grudging support, soon lapsed into insignificance and desuetude. The achievements of this period would have been greater, doubtless, but for the engrossing interest which the War of Secession exerted upon the educational as well as the popular mind. As it was, school gymnastics became secondary to military drill and elocution.

ATHLETIC REVIVAL AND ERA OF GYMNASIUM-BUILDING.

After the war closed, athletic sports received a great impetus, and it is chiefly due to their rapid expansion and robust development that the era of gymnasium-building, which opened with the completion of the Hemenway Gymnasium at Harvard University in 1880, owes its rise. It is chiefly since 1880, or rather since 1885, the year in which the cities of Kansas City and Chicago inaugurated their present systems of school gymnastics, that municipal authorities have shown renewed and increased activity in the discussion of measures looking to the better organization and management of physical training. While it is indisputable that this activity of mind has been stimulated to a measurable degree by the spread of professional and college athletics, certain other influences seem to me to have been far more powerful in determining the force and direction of the present movement for the advancement of physical education.

THE SPREAD OF SCHOOL GYMNASTICS IN CITIES, AND ITS CAUSES.

Prominent among the secondary agencies that have contributed to the introduction, in several of the leading cities of the country, of methods of gymnastic instruction that have stood the test of trial in Europe stand the achievements of the promoters and advocates of the German and Swedish systems of school-gymnastics. They deserve grateful mention and wider recognition than has been accorded to them hitherto, but they do not constitute an original and primary force. They derive their significance, as do the fragmentary and ill-compacted "systems" of their vociferous rivals, from a deeper source and a wider movement that bears them all on its ever-swelling tide. It can hardly be disputed that the *primum movens* of the restless and flooding agitation for hygienic reform in education — one phase

of which we see reflected in the physical education movement — is to be found in the widespread, half unconscious but deeply seated and unappeasable yearning of the people for efficient means wherewith to counteract the destructive influences which threaten the health and vigor of the children fated to be born and bred in the great cities of the land. Were the people's knowledge even approximately commensurate with their need and desire, the abatement of many an unsanitary and baleful nuisance in the field of public education would be in the past instead of the future tense.

THE INCREASE OF GREAT CITIES.

The growth of great cities is one of the most striking and momentous phenomena of the present century. The increase of urban over rural population has been particularly marked in Great Britain and the United States. In 1811 only 24 per cent. of the population of England and Wales lived in towns and cities of more than 10,000 inhabitants. In 1861 44 per cent. of the population was found in such towns, in 1881 56 per cent., and in 1891 62 per cent. In 1811 there was no city in England but London that had over 100,000 inhabitants. In 1861 the number of such towns had risen to 12, and in 1891 to 24. However, the "urbanization" of England seems to have been less rapid in the period 1881–1891 than in several of the earlier decades of the century.

In the United States, where the population of towns and cities of less than 8,000 inhabitants is termed rural by the census authorities, the urban population has increased from one-thirtieth, in 1790, to nearly one-third of the whole population in 1890, while the number of cities with 8,000 inhabitants has increased from 6 to 443 during that period. Of these 443 cities, 28 had upwards of 100,000 inhabitants.

MASSACHUSETTS THE COMMONWEALTH OF CITIES.

In the United States, Massachusetts is *par excellence* the Commonwealth of Cities. According to the terminology of the United States Census Bureau, the urban population of Massachusetts in 1890 constituted 69.90 per cent. of the population of the State — there being 47 towns and cities with a population of 8,000 or upwards. In 1880 the number of such towns and cities was 33. Since 1890 the number of municipalities having a city charter and a population of at least 12,000 has risen from 28 to 31. According to the Eleventh Census, as has been pointed out recently by a writer in the "New York Evening Post," there are: 9 States in the Union having no city with 20,000 inhabitants; 9 States having 1 such city; 4 States with 2 and 1 State with 3 such cities; while Massachusetts has 20 cities with a population of at least 20,000. In other words, "Virginia and half of the States of the Union combined show no more cities of over 20,000 inhabitants than are to be found in Massachusetts." "It is further worth notice," says the same writer, "that the 20 cities just mentioned in Massachusetts are a larger number than can be discovered in any other State, though 5 States have a larger census. While the population of Massachusetts is three-fourths of a million less than half of that of New York, her cities of the 20,000 class are more by 2; those in Pennsylvania are only 16; those in Ohio, 10; in Illinois, 7; in Missouri, 4."

It is estimated that in England just before the visitation of the Black Death in 1348–49, eleven out of every twelve Englishmen, or 91 per cent., lived in the country, and it has been prophesied that the time is at hand when the urban districts will contain as large a proportion of the English people as the rural districts contained in the time of King Edward II. In Massachusetts, in the early years of this century, the proportion of rural to urban population did not differ widely

from that which obtained in England five centuries and a half ago, since we find that in 1820 — when there were only two towns in the State, viz., Boston and Salem, large enough to become cities under our present statute — 89 per cent. of the population was in towns of less than 7,000 inhabitants. Should the urbanization of the State proceed at its present rate, eleven-twelfths of our population will be city-people before ten years have passed. Surely for us there is food for thought in the declaration that "the further progress of civilization is to depend mainly upon the influences by which men's minds and characters will be affected by living in large towns."

GENERAL EFFECTS OF URBANIZATION AND OF SEDENTARY OCCUPATIONS.

The well-nigh universal belief that the influences and concomitants of city life are prejudicial, on the whole, to continuous vigorous health seems to be well founded. The death-rate of urban districts, the world over, is almost invariably higher than in country-districts. This is especially the case as regards the mortality of infants and children. But for the influx of country-born men, great cities could hardly maintain either their size or their importance. More than forty years since, Sir Anthony Carlisle, an eminent and experienced medical man in London, declared that "no persons town-bred in both the male and female lines ever extend their children to the fourth generation." "The city of Paris," says a recent writer, "with its environs, boasts nearly one-twelfth of the total population of France, yet it does not escape the charge, which lies against so many other great cities, of being a huge maw into which the best of the national life is sucked. Only in the slightest degree is it the parent of the energy and distinction which it displays on so great a scale. In the political field, scarcely one of the distinguished men of the time is Paris-born. The President of

the Republic is not, nor is the President of the Senate or of the Chamber; not one of the ten Cabinet Ministers, neither of the Chief Justices nor of the Attorney-Generals of the higher courts, reckons Paris as his birthplace, nor does the Governor of the Bank of France. Somewhat similar results are obtained by scanning the lists of distinguished scholars, artists, journalists, soldiers. From the provinces have come a disproportionate majority of the men whose success in life makes Paris famous. Such facts are more striking in the case of the French capital, whose preponderance over the rest of the country has been so long established, than they would be in a newer country, where the headlong rush to the cities is a comparatively new thing."

Doubtless city death-rates are directly affected by the fouling of air and water and soil, and to the increased propagation of infectious diseases; but as Dr. Ogle, of London, has pointed out, these "direct consequences of close aggregation are probably as nothing in comparison with its indirect consequences or concomitants. The more crowded a community, the greater, generally speaking, is the amount of filth, of crime, of drunkenness, and of other excesses, the more keen is the competition, and the more feverish and exhausting the conditions of life; moreover, and perhaps more than all, it is in these crowded communities that almost all the most dangerous and unhealthy industries are carried on."

It is a significant fact that the death-rate of Boston should be highest in its most crowded quarters. For instance, in 1890 the death-rate for Wards 8, 9, and 16 taken together, with an average of 166 persons to the acre, was 29.40 per 1,000 living, while the death-rate for Wards 23, 24, and 25, having four persons to the acre on the average, the death-rate was only 18.61, while the general death-rate for the city, with an average of twenty persons to the acre, was 24.8, according to the United States Census.

Our modern factory system, besides stimulating the un-

due concentration of the operative and dependent laboring classes within narrow areas under unsanitary conditions, tends directly to promote a minute subdivision of labor, and in consequence an inordinate multiplication of crafts and occupations whose requirements may be met, for a time at least, by fractional not to say mutilated powers of mind and body. In this way what are termed "hands" in the labor market are produced, and the more rugged and massive muscular and mental powers, whose due exercise is essential to the development of whole, that is to say, of hale or healthy, men and women are suffered to dwindle and decay.

"It is certaine," says Lord Bacon in one of his essays, "that *Sedentary* and *Within-doore Arts*, and delicate Manufactures (that require rather the Finger than the Arme) have in their Nature, a Contrariety, to a Military disposition." While we may or may not agree with him in saying that "the Principal Point of *Greatnesse* in any *State* is to have a Race of Military Men," it cannot be denied that there is much hygienic wisdom embodied in his further proposal "to leave those Arts chiefly to Strangers, and to containe the principall Bulke of the vulgar Natives within those three kinds; *Tillers* of the Ground; *Free Servants;* & *Handy-Crafts-Men*, of Strong and Manly Arts, as Smiths, Masons, Carpenters, &c.; Not reckoning Professed Souldiers."

Did space permit, it could readily be shown that urbanization tends to cripple and shorten the lives and to weaken the offspring of men and women devoted to certain classes of occupations, but what concerns us most, in this connection, is a closer consideration of some of the means whereby we may in a measure protect the children in our public schools from the dangers that threaten them just because they are city-children; and the statement must here suffice that to the multiplication of "*Sedentary* and *Within-doore Arts*, and delicate Manufactures," must be ascribed a by no means inconsiderable portion of the increased mortality from certain

of the most deadly diseases of modern city-life, such as diseases of the respiratory and circulatory organs, and diseases of the nervous system.

PREPONDERANCE OF CITY CHILDREN IN MASSACHUSETTS SCHOOLS.

The following table, which I have compiled from data contained in the Report of the Massachusetts Board of Education for 1891–92, is introduced to show how far public-school education has become a city matter in our State. The main conclusion to be derived from it is, that the control of public-school affairs in Massachusetts is already in the hands of city school boards.

TABLE I.

SHOWING PROPORTION OF PUBLIC-SCHOOL POPULATION AND EXPENDITURES IN TOWNS AND CITIES OF 10,000 INHABITANTS AND OVER, AND IN THE CITY OF BOSTON, 1891–92.

	In the State at Large.	In 37 Towns and Cities of 10,000 and over.	Per Cent.	In Boston.	Per Cent.
Population in 1890	2,238,943	1,475,086	65.88	448,477	20.00
Number of Public Schools . .	7,336	3,603	49.11	690	9.40
Teachers in Public Schools .	10,965	5,435	49.55	1,420	12.95
Pupils in Public Schools . . .	383,217	242,063	63.16	68,963	17.92
Average Number of Pupils to a Teacher	34.9	[1] 44.5		[2] 41.5	
Amount Expended for Public Schools from Taxes	$9,058,938.26	$6,403,720.82	70.68	$2,028,102.39	22.37

[1] Corresponding figures for country districts, 25.5.

[2] Ditto for Boston Primary and Grammar Schools, 50., i.e., 52. Primary Schools, 48. Grammar Schools.

STANDING OF EDUCATION AMONG MASSACHUSETTS INDUSTRIES.

The economic worth of a healthy and vigorous race of school children is a calculable quantity. I therefore venture to class education among the leading industries of Massachusetts, and to present some comparative tables in order to emphasize some of the economic relations existing between this and other industries, though, in a sense, it is hardly fair, perhaps, to compare a robust unprotected industry with those that have so long led the protected "infant class," economically speaking.

TABLE II.

SHOWING ECONOMIC STANDING OF PUBLIC EDUCATION IN MASSACHUSETTS IN 1885, COMPARED WITH THAT OF LEADING INDUSTRIES.

Industries.	Number of Establishments.	Number of Persons employed.	Capital invested.	Wages paid.	Value of Stock and Material used.	Value of Product.
Cotton goods	165	60,132	$118,947,040	$16,915,633	$36,625,530	$61,425,097
Boots and shoes	2,366	64,858	34,313,421	26,916,608	70,178,677	114,729,533
Metals and metallic goods . . .	2,732	24,233	33,194,607	11,303,973	19,240,584	41,332,005
Woollen goods	189	18,970	29,995,668	5,688,981	19,422,953	31,748,278
Machines and machinery . . .	622	14,644	24,743,677	7,249,470	7,539,470	20,365,970
Leather	609	9,228	12,258,831	4,313,674	19,713,559	28,008,851
All industries	23,431	379,328	500,591,377	147,415,316	389,757,458	674,634,269
Public education	6,453	9,652	26,975,450	5,003,700	[1] 171,313,330	[2] 19,324,008

[1] Value of all pupils, see below.

[2] Value of graduates, see above.

The above table affords a comparative view of the salient onomic facts concerning public education, the leading in-ıstries, and all industries of Massachusetts in 1885, the ar in which the last State Census was taken. I am under ecial obligations to the Chief of the Bureau of the Statistics Labor, Horace G. Wadlin, Esq., who has kindly fur-ished the table from the official records of his bureau. nder the head of "public education" I have added certain ms so as to include the State school fund, the salaries id to the officers of the State Board of Education, and the laries of the principals and assistants in the State normal hools. The sum paid school committees for school supervis-ı in 1885 is also included under the head of "wages paid," ough the number of persons employed includes only perintendents of schools and teachers. I have computed e value of "stock and material used" and "value of prod-t," under the head of "public education," according to a ethod which is explained below. Properly speaking, the raw ıterial used in the public education-industry consists of pils entering for the first time each grade of school during e year in question, but it is impossible to determine their mber from existing educational statistics. The sum ven, viz., $171,313,330, represents the estimated value of the pupils found in the public and State normal schools 1885, and therefore is not strictly comparable with the ıer figures in the same column, though it does represent e present value, for that year, of the public-school popula-n as wage-earning machines in the process of manufacture. ıe value of product, viz., $19,324,008, is the combined imated value of the graduates, for the year, from the rmal, high, and grammar schools of the State, and is based, regards the last two classes of graduates, upon the actual mber graduated from the Boston high and grammar ıools in 1885.

The above table is obviously incomplete, as regards the

extent of the education-industry of Massachusetts, since it relates to but one department of that industry, viz., public education. Some notion of the relative importance of the various branches of education pursued in this State may be gained from the following table. It was necessary to choose the year 1889–90, since the necessary data for 1885 were not to be had.

TABLE III.

SHOWING APPROXIMATE EXTENT OF EDUCATION IN MASSACHUSETTS IN 1889–90.

	Number of Institutions.	Number of Instructors.	Number of Students or Pupils.	Capital invested in Buildings, Grounds, and Funds.	Wages paid.	Number of Graduates.	Estimated Value of Graduates.
1. Colleges and Universities . .	16	773	6,365	$19,704,347	. . . . .	626	$4,462,128
2. Technological Schools	5	217	1,274	2,872,922	. . . . .	. . . . .	. . . . .
3. Professional Schools	10	226	1,651	. . . . .	. . . . .	246	2,048,196
4. Academies	72	367	7,209	5,973,873	. . . . .	643	1,889,710
5. Board of Education	1	7	. . . . .	2,729,396	$17,500	. . . . .	. . . . .
6. Public Normal Schools . . .	11	35	1,492	602,100	74,869	411	1,953,072
7. Public Schools	7,147	10,415	371,492	23,844,069	5,324,000	17,244	16,871,976
8. Private Schools	399	. . . . .	43,355	. . . . .	. . . . .	. . . . .	. . . . .
9. Schools for Defectives	6	76	809	788,693	. . . . .	. . . . .	. . . . .
10. Nurse Training Schools . . .	5	18	306	. . . . .	. . . . .	96	684,288
Education as a whole	7,672	12,134	433,953	$56,515,400	$5,416,369	19,266	$27,909,370
All Public Education. — Total of Nos. 5, 6, 7	7,159	10,467	416,349	$27,175,565	$5,416,369	17,655	$18,825,048
Private Education	513	1,667	17,604	$29,339,835	. . . . .	1,611	$9,084,322

The above table is only approximative, as the Report of the United States Bureau of Education and the Report of the Massachusetts Board of Education, from which I have compiled it, do not contain sufficient data wherewith to make it complete. For instance, the number of graduates from the public schools is computed on the assumption that Boston (the number of whose graduates from the grammar schools is found in the Report of the Superintendent of Schools) furnishes one-sixth of the grammar-school "output" of the State, since it contains more than one-sixth of the school population of the State. It is impossible even to guess at the amount paid in wages to the instructors outside of the field of public education. Furthermore, there are no sufficiently comprehensive statistics available as to the number of pupils in schools of art, music, "expression," elocution, gymnastics, Christian science *et id omne genus;* or as to the proportion of the student class in Massachusetts who become temporary residents of the State in order to avail themselves of its educational facilities. Still the totals in Table III. are large enough to be noteworthy.

THE MONEY VALUE OF OUR SCHOOL POPULATION.

I am perfectly well aware that in the present crude and undeveloped state of the educational and vital statistics of Massachusetts, no full and exact estimate can be made of the money value either of the raw material undergoing transformation, of the raw material wasted, or of the finished product turned out by our education-mills; but a suggestive and fairly satisfactory estimate of the value of our school-population as a collection of potential wage-earning organisms or machines may be reached if we adopt certain conclusions of the late Dr. Farr, of London, than whom neither Great Britain nor America has produced a more trustworthy and masterly student of vital statistics. According to Dr. Farr's table entitled the "Money Value of a Man"

(see his "Vital Statistics," London, 1885, p. 536) the "present value" of the future wages of an English agricultural laborer, after deducting the cost of maintenance, is £5 at birth; £56 at 5 years; £117 at 10 years, and so on up to 70 years; the maximum, £246, being reached at the age of twenty-five. By using a table based on the above figures showing the value at each age from 5–20 years, the total value of the 58,838 children in the schools of Boston in 1889–90 is found to amount to $29,830,222, allowance being made for the admixture of females, and the slightly greater wage-earning power of certain classes of Massachusetts operatives, as compared with English. Assuming that the valuation of the public-school children in the State was six times greater, since the Boston schools contained one-sixth of all Massachusetts public-school children in 1890, and adding $886,248 to the product as representing the money value of the pupils in public normal schools, we find $179,867,580 to be the calculated value of the "stock and material" placed at the disposal of the "persons employed" in the public-school industry of the State in 1890. The "value of product" I have set at $20,881,005, that being the sum of the estimated values of the graduates of the grammar, high, and normal schools of Massachusetts taken together in 1890. It is manifest that college graduates and grammar-school graduates have not the same value as potential wage-earners. Dr. Farr's tables give the highly paid agricultural laborer's earnings, for a series of years, as about one-fourteenth of the earnings of a professional man of moderate income. In estimating the comparative value of the output of elementary, secondary, and superior educational institutions, I have adopted the following rough scale:

1 grammar-school graduate	= 1 mill hand	= $594.00
1 high-school graduate	= 5 mill hands	= 2,970.00
1 normal-school graduate	= 8 mill hands	= 4,752.00
1 college graduate	= 12 mill hands	= 7,128.00
1 professional-school grad.,	= 14 mill hands	= 8,316.00

If the amount paid in salaries to teachers, superintendents, etc., were capitalized at four per cent., the amount of "capital invested" given in Table III. would be increased by more than one hundred millions of dollars. A very considerable sum arising from the money paid for tuition, living expenses, etc., by those of the student class who come from other States, helps to swell the wealth of Massachusetts year by year, and should be credited to the education industry, if it were our purpose to attempt to make a complete study of the economic value of that industry.

By far the greater part, say 90 per cent., of the population of Massachusetts between the ages of 5 and 15 are engaged in the occupation of attending school. For instance in 1885, the year of the last State Census, of the 358,393 persons in Massachusetts ranging in age between the above-mentioned limits, it would appear that 312,751 were so engaged. That is to say, the number of persons of the age-class in question, devoting their time and energy, to the distinctively "Sedentary and Within-doore" occupation of schooling, outnumbered, by more than 80,000, *thrice* the total number of persons of all ages engaged in agricultural pursuits in 1885; and fell short by only 67,000 of the number of persons engaged in all the manufacturing industries of the State in the same year.

INFLUENCE OF SCHOOL LIFE ON DEATH-RATES.

How far "schooling" as an occupation is beneficial or prejudicial to public health in the United States is largely an open question, as nowhere in the country, so far as I am aware, have school authorities or boards of health taken effectual measures to settle it. It is scarcely too much to say that it would be easier, under present conditions, to estimate the losses entailed by hog cholera and the cattle plague throughout the Union than to determine the number of children who succumb annually to school diseases in

any State. Except by indirect methods, it is not possible to compute, even in Boston, the crude death-rate of school children, as such, from any official reports; while comprehensive and accurate statistics showing the number of school children who are incapacitated annually by sickness, for a longer or shorter period, are utterly lacking. Various reasons might be adduced to account for this strange neglect of the scientific study of school-life and its effects. One, however, will suffice here. It is this: nobody, broadly speaking, takes the trouble to compile the morbidity or mortality statistics of school children and youth, for either academic or practical purposes, because nobody is or would be paid for so doing.

Convincing statements either pro or con based on wide and accurate observation of facts regarding the influence of school-life upon the death-rate of children are not numerous. I know of none so well worth quoting as the following from the Report for 1882 of the Registrar-General of England: "The death-rate of children (5–15) in 1861–70[1] (in England and Wales) was 6.3 per 1,000. It fell in 1871–80 to 5.1 per 1,000; a decline of 19.05 per cent. The main part of this fall was due to diminished mortality from the chief zymotic diseases. These diseases caused a mortality of 2.9 per 1,000 in the first decennial period, but only 2.1 per 1,000 in the second. In the first period (1861–70) the death-rate from all causes other than zymotic was 3.4 per 1,000; in the second it was only 3.0.

"But inasmuch as school work if it be injurious to health would probably be so by affecting the brain and generally the nervous system, it would be well to split up these death-rates from causes other than zymotic into death-rates from diseases of the nervous system and death-rates from other causes. When this is done, we find that the entire fall was due to diminished mortality from other causes.

[1] It should be remembered that England had no Board Schools till 1870.

The rate from these fell from 2.9 to 2.5 per 1,000, whereas the death-rate from nervous affections remained unaffected. Indeed, if a second place of decimals were taken, it would appear that nervous diseases had slightly, very slightly, increased.

"*It would appear, therefore, that while the mortality of children from all causes and from zymotic causes has considerably diminished, their mortality from diseases of the nervous system has exceptionally remained stationary. The general improvement has not affected this class of diseases.*"

The statistics published by our State government with regard to deaths from special causes, at different age-periods, are so meagre and incomplete as to preclude a strict comparison between the death-rates of English children, given above, and the corresponding death-rates of Massachusetts children. Still, such evidence as we have favors the view that the proportion of deaths due to diseases of the nervous system to deaths from all causes, *at all ages, and during the age-period* 5–15, increased in Massachusetts between 1880 and 1890.

ESTIMATED LOSSES DUE TO DEATHS OF MASSACHUSETTS SCHOOL-CHILDREN.

According to the report of the State Board of Education rather more than 89 per cent. of the children (5–15) living in Massachusetts in 1885 were found in the public schools. It is fair, therefore, to assume that at least 89 per cent. of the children dying between 5–15 years of age were public-school children. The average net value of the Massachusetts child (5–15) may be set at $478.41. In 1885 the deaths in the State among this class of children numbered 2,025, representing a total loss of $968,780. Reckoning the loss due to deaths among school-children at 89 per cent. of the above sum, we have $862,215. The deaths of children between 5–15 in Boston numbered 500 in 1885, involving a loss of $239,205,

of which sum $181,795 represents the loss accruing from deaths of public-school children between 5–15; which loss equals 17.5 per cent. of the total money-value of all the graduates of the Boston grammar schools in that year. If the cash expended by the city for the schooling of the public-school children who died in 1885 be added to the sum last mentioned, we have a total loss of more than $193,000 for the year. There is abundant and convincing evidence that Boston death-rates are so high as to entail an unnecessary annual loss of lives and wealth. The subjoined Table IV. is adduced in support of this statement:

COMPARISON OF BOSTON, BERLIN, AND LONDON DEATH-RATES.

TABLE IV.

SHOWING THE RELATION BETWEEN CERTAIN DEATH-RATES OF BERLIN (PRUSSIA), BOSTON, AND LONDON (ENGLAND).

	General Death-rate, *i.e.*, Average Annual Mortality per 1,000 Inhabitants of all Ages, 1881-90.	Special Death-rates, 1885–90, *i.e.*, Average Annual Mortality per 1,000 living at each Age-Period.			
		Persons under 5 Years.	Persons 5–10.	Persons 10–15.	Persons 5–15.
	1.	2.	3.	4.	5.
Berlin . . .	24.5	110.0	7.1	2.6	4.8
Boston . .	23.3	88.2	(8.2) [1]	(4.2) [1]	6.6
London . .	19.1	61.2	5.1	2.6	3.9

The primary purpose of this table is to discover whether Boston school-children die in greater numbers than is necessary and irremediable in comparison with London and Berlin

[1] Average rate for Massachusetts in censuses for the years 1865–1885, as the Boston rate cannot be computed from published data. For the years 1875, 1885, and 1890 taken together, Boston death-rates were as follows: 5–10 years, 8.8; 10–15 years, 4.5; 5–15 years, 6.9 per 1,000 living.

children; and incidentally to compare the mortality rates of the three cities: (1) at the age-period in which deaths are most frequent, *i.e.*, from birth to 5 years of age; and (2) at the age-period in which deaths are least frequent among civilized men, *i.e.*, from 10 to 15. The general death-rate is given too, though it is of less importance in this connection. While a comparative table showing the relative rank of American cities as regards the death-rates selected would be instructive, and almost certainly more encouraging, I have chosen, or rather have been obliged to choose, to compile the death-rates of London and Berlin, since our American cities do not publish sufficiently full and detailed vital statistics to enable me to prepare such a table as that given above. The mortality rates of Boston children between 5 and 10, and 10 and 15 years, respectively, are in all probability considerably higher than the rates given in columns 3 and 4, which are rates for Massachusetts — corresponding rates for Boston being very difficult, if not impossible, to compute from published data.

Analysis of Table IV. show that, as regards each of the five death-rates chosen for comparison, Boston has a higher mortality than London; and that, excepting the general death-rate and the death-rate for children under 5 years of age, its mortality rates are also higher than the corresponding rates of Berlin. Boston's birth-rate is much lower than that of Berlin, it should be remembered. That Boston should lose, in round numbers, 3 children to the thousand of school age more than London, and 2 to the thousand more than Berlin, every year, is a significant and by no means consolatory fact, especially as the total population of London is more than nine times that of Boston, and more than three times that of Berlin, while London's population between the ages of 5–15 for the years 1885–90 was over eleven and Berlin's over three times greater than Boston's population from 5 to 15. Moreover, Boston is less densely populated by far

than either London or Berlin. Another fact may be instanced as showing that Boston's death-rate is abnormally high. It is this: the general death-rate for the whole of Boston, and the general death-rate of the central districts of London, *which include its East End slums*, were identically the same in 1892; viz., 23.9 per 1,000 inhabitants.

BOSTON CHILDREN OF SCHOOL-AGE DIE FASTER THAN LONDON AND BERLIN CHILDREN.

According to the returns of the School Census of Boston, the average annual population of the city between 5 and 15, for the years 1885–90, was 71,000 in round numbers; and according to the Registration Reports the average annual number of deaths of Boston children (5–15) was 471. During 1885–90, according to the School Census returns, the number of children 5–15 in the public schools of Boston was 76.8 per cent., on the average, of the whole number of such children in the city. Had Boston's death-rate been as low as that of Berlin, viz., 4.8 per 1,000 children of 5–15, only 341 deaths of this class would have been registered annually, a saving of 130 lives; while a death-rate of 3.9, as in London, would have called for the registration of only 277 such deaths, an average annual saving of 194 lives during 1885–90. In other words, Boston threw away 130 children of school age, on the average, during each of the six years in question, judged by the Berlin standard; while according to the London standard the average annual, needless loss amounted to 194 children's lives, of which number 77 per cent., or 149, belonged to public-school children. During the period in question Boston spent $27.53 annually, on the average, for every child belonging to its public schools (exclusive of expenditures on new buildings, etc.), which sum multiplied by 149 gives us $4,101.97 as the amount of taxpayers' cash annually thrown away on children who die because they are Bostonians rather than Londoners, while the total loss, com-

puting the money value of 149 school-children at $478.41 each, would be $75,385, or about 5 per cent. of the average net annual running expenses of the Boston schools in 1885–90.

It is possible, of course, to attribute the greater healthfulness of London, as compared with Boston, to the relative insalubrity of our New England climate; though one who is not disposed to blink the facts may doubt the existence of such insalubrity, aside from any unwillingness to disavow the valiant boast of our ancestors anent the superiority of New England air to Old England's ale. Why, may we ask, should the harder-worked school-children of Berlin, living in a city thrice as large as Boston and at least thrice as densely populated, and subjected to climatic influences usually held to be worse, hold out so much better against the ravages of disease and death, unless it be that municipal and school sanitation are better devised and more efficiently carried out on the banks of the Spree than on the banks of the Charles?

HIGH LOCAL DEATH-RATE OF BOSTON.

Let us consider the suggested superiority of the London climate for a little. It is fair to assume that the climate of London is the climate of England, and that the climate of Boston is the climate of Massachusetts, to all intents and purposes. Admitting for the sake of argument that the lower general death-rate of England in comparison with that of Massachusetts is due to climate, the excess of deaths in Massachusetts amounts to less than 1 per thousand; since the death-rate of England (18.71 per 1,000 inhabitants for the period 1885–90) is only 0.75 less than that of Massachusetts, which was 19.46 during the same period. London's death-rate, 18.98 per thousand (1885–90), exceeds the death-rate of England by only 0.27, which would appear to represent the total effect of the various death-producing influences due to its being a city. Boston's death-rate (1885–90) was 24.01, an excess of 4.55 per thousand over the

death-rate of the State. This excess, 4.55 per thousand, represents the effect of local — *i.e.*, city — influences. Subtracting 0.75 as due to the superiority of English over Massachusetts climate, and we have 3.80 per thousand as the death-rate from local or distinctively Boston influences, so that after making allowance for climatic influences, "*Boston's local death-rate" appears to be fourteen times as great as London's local death-rate!* Surely there is ground for the suspicion that municipal sanitation is less effectual in Boston than in London, even if we give full weight to the suggestion that immigration adds much more to the mortality of Boston than to that of London.

SANITATION LESS EFFICIENT IN BOSTON THAN IN LONDON.

An approximate test of the efficiency of municipal sanitation is found in the relative mortality due to infectious diseases. If Boston and London were equally healthful cities, the deaths in them from infectious diseases might be expected to bear approximately the same ratio to each other as the ratio of their respective populations. But the total number of deaths in London, in the decade 1881–90, from diphtheria, scarlet fever, typhoid fever, and measles was less than five times as great as the total deaths in Boston from the same diseases during that period, though London's total population is nearly nine and one-half times greater than that of Boston! Verily, the wages of sanitary shortcomings is death.

So much for the more general and salient features of the situation. It would be presumptuous and idle, in lieu of positive evidence derived from a searching and thoroughgoing investigation into the deeper and more complicated phases of the question of public and school hygiene, to attempt to show what proportion of the losses annually sustained by this city from preventable diseases and death

should be charged to public apathy and ignorance, to private neglect and transgression of municipal ordinances, and to inadequate and ineffectual measures of one or another branch of the city government. But it is tolerably certain that there is abundant need and ample scope for more comprehensive and vigorous action, than is taken at present, on the part of every board and bureau that is concerned, even remotely, in promoting either the health of the public as a whole, or in guarding the sanitary interests of a well-defined section of the population, such as is constituted by our school-children.

REDUCTION OF DEATH-RATE IN THE UNITED STATES ARMY BY HYGIENIC MEASURES.

As an example of what can be effected by a well devised and efficiently managed system of hygiene, adapted to meet the peculiar needs of a particular class, the good health which characterizes the rank and file as well as the officers of the United States Army may be instanced. Due allowance being made for the fact that only men of sound physique are accepted as recruits, the relatively high health of the common soldier must be attributed, in no small measure, to the scrupulous enforcement by competent and responsible experts of an adequate and intelligent system of professional and personal hygiene. That the health of the army is unusually high is evident when we compare its general death-rate with the general death-rate of the country at large for the age-period 20–60 years — since the number of men over sixty in the army is so small that it may be left out of account. In 1880, according to data found in the Tenth Census of the United States, the death-rate of men between 20 and 60 years of age was 9.36 per thousand, that of the Army of the United States for the decade 1881–90 was considerably less, viz., 8.57 per thousand, while for the three years 1890–92 it was 7.72, and in 1892 only 6.11 per

thousand, *or* 0.53 *per thousand less than the death-rate during* 1885–90 *of Boston children of* 5–15, *which, be it remembered, is the most healthful decade in their lives.*

INSTRUCTION IN PHYSIOLOGY IS INEFFECTUAL FOR SECURING HEALTH OF SCHOOL-CHILDREN.

It is now more than forty years since the Massachusetts Legislature enacted a law authorizing school committees throughout the Commonwealth "to make physiology and hygiene a compulsory study in all public schools," and requiring all public-school teachers to be "examined in their knowledge of the elementary principles of physiology and hygiene and their ability to give instruction in the same." Is it probable that military-hygiene could have been brought to its present state of efficiency if the War Department had placed its main reliance for securing the health of the army on an Act of Congress passed in 1850, requiring sergeants and corporals to be examined as to their ability to instruct the rank and file in the "elementary principles of physiology and hygiene," and had forborne to give the Medical Staff any jurisdiction outside of hospital precincts? Is not the present low estate of school-hygiene, which has practically no standing among the arts and sciences in the United States, due, at least in some degree, to the neglect or avoidance by State and city boards of education of the very policy which makes military-hygiene so conspicuously successful?

Judged by its fruits, the Massachusetts policy of promoting the health of school-children by the "dissemination of useful information" as to the nature and needs of the human body has not proved a success. Neither the subject-matter nor the methods of teaching employed in the instruction given in our schools in physiology and hygiene has kept pace with the striking development which those sciences have undergone since 1850. The text-books furnished our teachers in those subjects, for the most part, are the produc-

tions of mere compilers and book-makers, who are in no sense worthy to be termed physiologists or hygienists. So long as reliance is placed upon such feeble and futile measures, and the generality of State and local boards of education are content to ignore or to misapply the principles of school-hygiene, it seems vain to hope for the general adoption of a policy adequate to protect the rising generation, in so far as it can be protected, against the deteriorating influences of school and city life. It is clearly manifest that the teaching class, as at present trained and constituted, is unequal to devising and enforcing a practicable and effectual system of school sanitation and hygiene. Whither shall we look for a Moses to lead the children of Massachusetts into the promised land of health and vigor, out of the arid wilderness of text-book lessons which they entered under the well-meant guidance of the State Board of Education, and in which they have been wandering for more than forty years? May it not come to pass that the continuance of the present *laissez faire* policy of school-boards as a class will provoke the boards of health to claim jurisdiction in regard to the prevention of school-diseases, even as they have taken over the control of school-children suffering from contagious and infectious disease?

It is too soon, perhaps, to say positively and precisely how far the denizens of our cities have degenerated or are degenerating in physique, since the country-districts still furnish the cities with a large contingent of sturdy and ambitious youth year by year. There can be no question, however, that vigorous efforts to improve the stamina of the school children of Boston would result in a very considerable saving of useful lives, and in enhancing the wealth and happiness of our people. It is within our power to forestall by preventive measures some of the evil effects of overcrowding, and of the growing addiction of the masses to sedentary pursuits, before the country-districts become depleted of their

better breeds of men. In this, as in other fields, preventive measures are more hopeful and less costly than are means of cure.

PLACE OF MUSCULAR EXERCISE AMONG HYGIENIC MEASURES.

Among the agencies which are most effectual for promoting and conserving the health of growing children, muscular exercise may be fairly placed next to pure air, sunlight, and a sufficiency of nutritious food. Popular belief and expert opinion are substantially at one in holding that exercise is necessary for children and "does a man good." But when it comes to the adoption of ways and means for securing appropriate and adequate facilities for the development and exercise of the muscular powers of school-children, one finds a bewildering variety of opinions and diversity of procedures. In the practical management of physical training, educational authorities throughout the United States have shown a marked tendency to follow rules of thumb rather than the teachings of science and experience. Yet those teachings are sufficiently plain and positive to warrant our discarding mere rules of thumb in this as in other branches of education.

THE HUMAN BODY AS A MACHINE, AND ITS WORK.

Modern physiology teaches us that the human body is a living mechanism "whose proper working," to borrow the words of Huxley "we term health; its disturbance disease; its stoppage death." In general terms, the main work of the body consists in transforming potential energy into active energy, or the energy of motion. The body's fund of potential energy is derived from the food-stuffs contained in the blood. The potential energy thus furnished is changed into active energy through the chemical processes which take place in the cells of the living tissues. Inasmuch as the

body is a self-building, self-repairing machine, it must continually renew its substance and replenish its capitalized or stored-up energy; hence a large part of its active energy is expended in the form of heat, chemical action, and internal mechanical work for purposes of general maintenance and repair. In this respect the human body is like all other animal machines. Man in contradistinction from the brutes — thanks to his more complicated structure and more highly specialized functions — has a relatively larger "live capital" of free energy that can be turned into special forms of mechanical work. In comparison with savages and barbarians, civilized men have a larger fund of such capital at command, together with greater aptitude for expending it wisely and economically; while among civilized men, the educated man, by reason of his superior training, is able to do more and harder and better work than the ignorant man. From our present standpoint, the main end of education appears to be to develop as fully as possible the power of making the most of the fund of energy which is available, in the individual organism, after the maintenance and repair of that organism have been provided for.

INTERRELATION OF MENTAL, MORAL, AND PHYSICAL TRAINING.

Moral, mental, and physical training, each and all, aim at developing the faculty or power of action — of acting in accordance with a rule of right and wrong, of acting intelligently, so that action and the ends of action shall be adapted to each other; of acting easily or with the greatest economy of force; *i.e.*, so that energy shall not be wasted in puposeless, irrelevant, roundabout, or self-defeating movements. This suggests closer relations and interrelations between physical, mental, and moral training than are usually recognized by teachers, or the trainers and governors of teachers. Since physical training aims at perfecting the body as an instrument and at rendering it the willing, prompt, and efficient

servant of an intelligent mind and a sensitive and enlightened soul, it cannot be gainsaid that physical training lies at the foundation of mental and moral training, or that it enters and must enter as a more or less prominent and necessary factor into the greater number of our educational procedures. The full success or failure of physical training, therefore, does not relate simply to the size or strength of the red meat we call muscles, but is measured in part by our achievements in the domain of mind, and the domain of conduct. In other words, we judge of the mental and moral worth of a man, by the purpose, number, consecutiveness, and skifulness of his ordinary and extraordinary acts, which acts, when viewed objectively and concretely, are reducible to the contractions of muscular fibres.

STRUCTURE OF HUMAN BODY, AND CLASSIFICATION OF ITS PARTS.

Regarded as a structure the human body is an aggregation of a vast number of living, individual cells which may be classified according to their pedigree, form, or function. These individuals are so grouped and joined together in our various organs that the body as a whole forms a communal structure, a sort of federal union of tissues and organs. Among machines it resembles an army or a city, rather than such mechanisms as an eight-day clock or a wind-mill. "Of this army," says Huxley, "each cell is a soldier, an organ a brigade, the central nervous system headquarters and field telegraph, the alimentary and circulatory system the commissariat. Losses are made good by recruits born in camp, and the life of the individual is a campaign conducted successfully for a number of years, but with certain defeat in the long run." Broadly speaking, an army is organized, equipped, fed, drilled, and led in order that its executive machinery — which in the last analysis consists of the skeletal muscles of its soldiers — may be enabled to transform the

largest possible amount of accumulated energy into the mechanical work of marching and fighting. So, in general terms, it may be said that the principal minor mechanisms found in the human body largely subserve the interests of the organs devoted to the performance of voluntary-purposive mechanical work, viz., the muscles.

It is the skeletal muscles and the skeleton, then, which constitute the executive working machinery of the body. But it is important to remember that no skeletal muscle is a simple organ. Every skeletal muscle is made up of two conjoined mechanisms: a contractile, executive mechanism, the muscle proper, and a stimulating, regulative mechanism consisting of nerve fibres and gray-matter nerve cells; that is to say, "a muscle" is fundamentally a muscle and a nerve besides. Or, to put it in another way, muscles are the slaves of the nerve centres. So close and necessary are the bonds existing between the muscular and nervous systems that, so far as our movements are concerned, the separate disjoined action of either system under ordinary circumstances is practically unthinkable. Muscles without their exciting nerves become inactive and inert, and nerves deprived of muscles to do their bidding are impotent.

The muscular and nervous tissues have been well termed "the master-tissues." All other tissues, omitting the indifferent and supportive tissues, such as bone and cartilage and connective tissues, may be classed under the head of "tissues of digestion," or "tissues of excretion," which are the terms used by the English physiologist, Michael Foster, who points out that "the whole of the rest of the body is engaged (1) in so preparing the raw food and so bringing it to the nervous and muscular tissues, that they may build it up into their own substance with the least trouble; and (2) in receiving the waste matters which arise in muscular and nervous tissues, and preparing them for rapid and easy ejection from the body."

The neuro-muscular system, then, has two sets of servants, its purveyors and its scavengers. The digestive and assimilative organs and the arterial section of the organs of circulation and respiration are "purveyors," and the venous section of the circulatory and respiratory organs, the perspiratory and the renal organs are "scavengers." The purveyor and scavenger-tissues serve each other as well as the master-tissues, it may be remarked, and, like the muscles, since they contain more or less of muscular tissue, are controlled by the Archaeus of the body, if we may so denominate the nervous system.

GENERAL EFFECTS OF MUSCULAR EXERCISE.

Next to the visible movements due to muscular contraction the most direct and obvious effects of neuro-muscular action are found in the increased circulation and ventilation of the blood. The effect of exercise upon the processes of digestion, blood-making, and blood-cleansing is an indirect one; those processes being modified, so far as muscular activity is concerned, by the changes wrought by it in the character, volume, and distribution of the general blood-stream. But the most important effect of muscular exercise, though it is too often overlooked, is to be found in the structural and functional improvement of the nervous system, or rather those parts of it which are concerned in the regulation and control of the skeletal muscles. It can hardly be too strongly emphasized that the full size and working power of the brain, spinal cord, and nerves depend very largely upon the normal working of their executive end-organs, the voluntary muscles.

What may be termed the gross-income of the bodily community is derived chiefly from the productive activity of its purveyor and scavenger members; though the master-tissues, whose leading function is the regulation of expenditures by reason of the active co-partnership existing between them

and their servants, materially assist towards the accumulation of the gross income-fund. It is preëminently the function of the master-tissues to turn the net-income of the body to the fullest and best account; which net-income, as has been said, is what remains from the gross-income after the fixed charges for construction, maintenance, and repair have been met. To secure the wise expenditure of net-income, therefore, it is needful to prevent the master-tissues from developing aimless, blundering or spendthrift habits of action. Prevention, in this instance, can only be secured through the intelligent and adequate training of the neuro-muscular system. If the development of ability to make intelligent and adequate use of the net-income of man's free energy be the main end of his education, it is tolerably clear that neuro-muscular education, or physical training, must constitute a considerable part of the measures directed to that end.

SPECIAL EFFECTS OF MUSCULAR EXERCISE.

The primary, essential, universal factor in all forms of physical training is neuro-muscular exercise. The effects of exercise upon a single muscle are chiefly two. On the one hand there results a general condition which may be termed the heightened health of the neuro-muscular machine, which state of health involves the attainment and maintenance of a normal degree of size, strength, and working power in its structural parts; and, on the other hand, a more complex and special effect; viz., the acquisition or organization by its neural parts of advantageous habits as regards the origination, transmission, and regulation of stimuli. The effects of exercise upon the muscular system as a whole differ in degree but not in kind from the effects of exercise upon a single muscle. The habitual movements having their seat in the various groups of muscles are said to be represented by the central masses of nervous tissue through whose stimulative action the muscles are animated or innervated.

THE HYGIENIC AND EDUCATIONAL ENDS OF EXERCISE.

The ends of exercise may be characterized, in a general way, as first the promotion of health, and second the formation of proper habits of action. The one is a hygienic end, while the other is a distinctively educational end. It matters not whether we consider a single muscle which admits of only a single limited motion, or a group of muscles, or a complicated system of muscular organs like the organs of speech, or the communal structure we call the body, or a class of school children, or a foot-ball team, or a regiment of soldiers — the ends of exercise are practically identical in each case, and can only be attained through a combination of hygienic and educational measures.

The main field of education is the nervous system, and the principles of all forms of education into which physical training enters as a factor are based upon the power of the nervous system to receive impressions and to register them or their effects; in other words, upon its ability to memorize the part it has played in acquired movements, and on occasion to revive and repeat such movements. The student of nervous disorders notes carefully the peculiarities of his patient's movements in order to determine the seat of his injury or weakness and the nature and extent of his disease. It is equally necessary that the practical teacher should apprehend the significance of the spontaneous and acquired muscular movements of his pupils, be those movements coarse or fine; since those movements constitute an index of the action of the brain which it is the teacher's business to develop and train, and also serve to measure the success and test the character of the teacher's efforts at instruction. This is true not only of instruction in foot-ball, military drill, gymnastics, sloyd, shoemaking, and sewing, but of instruction in drawing, singing, and the three R's as well. Genuine success in any of the departments of instruction mentioned above is

conditioned on the intelligence and skill of the instructor in selecting and teaching such forms of neuro-muscular action as are adapted to the sex, age, and capacity of his pupils.

The motor element in education is so large and of such vital importance that we hazard little in predicting that the systematic study of movements is destined to play a much more prominent part than has been accorded it hitherto, in the professional training of all classes of teachers. "It can scarcely be too often reiterated," says Mercier, an English alienist, in his "Nervous System and the Mind," "that the study of movements is the only means by which we can gain any insight whatever into the working of the nervous system."

CHARACTERISTICS OF CENTRAL AND PERIPHERAL MOVEMENTS.

As Mercier's work, cited above, contains the fullest and most satisfactory study of movements that has come under my notice, I am content to follow him in developing that part of my subject which relates to the classification of movements and the hierarchical arrangement of the nerve centres which "represent" them. As regards their regional relations our bodily movements may be characterized as central or peripheral. "By a central movement," says Mercier, "is meant, generally, a movement of the trunk. By a peripheral movement is meant, generally, a movement of the digits, mouth, or eyes; and the remaining parts of the body are classed in an intermediate position, and in one which approximates to the central or to the peripheral, according, generally, to the size of the part moved, and the size and individuality of the muscles concerned in the movement. . . . The movements here called central are continuous in duration, vague in limitation, few in number, same in character, and form a general, approximate or coarse adjustment. Progress toward the periphery brings us to movements that are more intermittent in duration, more precisely defined, more nu-

merous, more diversified, and more specially adapted to particular ends; and when at the eyes, the articulatory apparatus, and the digits, we reach the extreme periphery, all these characters reach their highest degree of development."

As typical central movements the following may be instanced; those principally concerned in breathing, standing, walking, running, riding, rowing, swimming, bicycling, and many gymnastic exercises; while typical peripheral movements include those involved in articulation, writing, drawing, engraving, watch-making, violin-playing, sewing, knitting, and the like.

Movements may be classified, also, as simultaneous or successive, the former being mainly central and the latter mainly peripheral in character. "Coördination in simultaneity affects the central movements first and most, spreads towards the periphery and affects the most peripheral movements last and least. Coördination in succession involves the most peripheral movements most often and in the most prolonged and complex sequences; and when, as often happens, the succession of movements begins centrally and spreads to the periphery it is the most peripheral movements to which all the others are subservient and act as aids and adjustments." As an example of successive movements beginning centrally, those concerned in vocal utterance may serve as an example. Vocal utterance is the resultant effect of the combined, *i.e.*, coördinated action of the organs of breathing, phonation, and articulation, which are situated in the chest, throat, and mouth respectively. Breathing movements are central, voice movements intermediate, and articulatory movements are peripheral. The most central movements in this series present two phases, viz., inspiration and expiration. In each phase the movements of abdominal wall, diaphragm, ribs, and glottis start simultaneously, but the enunciation of consonant and vowel sounds results from rapid successive movements of the vocal cords and of the tongue

and lips, — results, that is, from peripheral movements co-ordinated in succession.

The nervous mechanisms which innervate and represent our various movements have been divided according to their situation into lower, higher, and highest-level centres; and again they have been classed as fundamental or accessory according to the order of their development. In general we may say that the coarser, more central movements are represented in lower-level centres, *i.e.*, in the more central or basal regions of the brain and spinal cord; that the centres representing intermediate movements are found at higher places in the hierarchy than those which represent central movements; and that the highest-level centres, in the cortex of the brain, represent the most special, precise, elaborate, and varied of our peripheral movements.

THE EVOLUTION OF THE NERVOUS SYSTEM.

In the evolution of the race and of the individual, the more general functions and organs are formed and developed earlier than the special functions and their organs; *e.g.*, the circulatory and alimentary organs develop earlier than the vocal organs and the hands and feet. The same law obtains likewise in the growth and development of the nervous system, both as to its massive and its minute parts. The nervous mechanisms concerned in central movements are at once older and more lowly placed than the mechanisms concerned in peripheral movements. To those parts of the nervous system, in man, which are formed earliest and are practically completed and fully organized at birth, the late Dr. Ross, a leading English neurologist, gave the name "fundamental," while he designated as "accessory" those parts which are rudimentary at birth and comparatively late in their growth and development. Broadly speaking, central movements are represented by low-level, fundamental centres, and peripheral movements by high-level, accessory centres. If, as has been

stated, the nervous system is the field of education, education to be natural, safe, and effectual should defer the training of the accessory parts of the nervous system until the development of its fundamental portions has been secured by appropriate forms of general training.

HOW PHYSICAL TRAINING STRENGTHENS THE NERVOUS SYSTEM.

As is well known, city children as a class present more cases of nervous instability than do country children as a class. I therefore venture to quote at length Dr. Ross's views as to the part which physical training should play in the education of children with tendencies to nervous instability. "The children of parents who manifest a predisposition to severe nervous disease, as hysteria and epilepsy, are frequently not merely quick in their peceptive faculties but are also often possessed of great intellectual powers, and much of their future happiness depends upon judicious mental training in youth. The children of such families ought not to be subjected to any severe mental strain during the period of bodily development, or be allowed to enter into competition with other children in the mental gymnastics which are so fashionable in our public schools. On the other hand, regular graduated and systematic exercise in the form of walking, riding, gymnastics, and calisthenics does a great deal of good by strengthening both the muscular and nervous systems. Everything which tends to develop the muscles of the lower extremities and trunk, and indeed all muscles engaged in executing the movements common to both man and the lower animals, tends also to develop the fundamental part of the nervous system, and a good sound development of the fundamental is the first prerequisite to a well-balanced development of the accessory portion.

"The order of the development of the nervous system in the race has been from the fundamental to the accessory

portions; and no one can reverse this process with impunity in that further development of the individual which constitutes education in its widest sense. Yet until a few years ago the natural order of development was reversed in the education of youth, and especially in female education, so far as this could be accomplished by human contrivance and ingenuity. The natural order of development was indeed observed so far as to allow the child to acquire the power of walking prior to that of other accomplishments; but the care of the infant had not yet been transferred to the professional trainer. No sooner, however, had what is technically called education begun, than the professional trainer began to exercise the small muscles of vocalization and articulation so as to acquire the art of reading, the small muscles of the hand so as to acquire the art of writing, and in the case of young ladies the still more complicated movements necessary in running over the keyboard of a piano; while little attention was paid to the development of the larger muscles of the trunk and lower extremities, upon the full development of which the future comfort of the individual depends.

"In the education of youth in the present day the laws of development and physiology are not so openly violated and defied as they were a few years ago; but much remains to be done in this respect, and especially in the education of children of families who manifest a neuropathic tendency. In the children of such families the greatest possible care should be taken to develop carefully the fundamental actions, inasmuch as a sound development of these involves a stable construction of the fundamental part of the nervous system; a process which makes the latter to offer a greater specific resistance to the paroxysmal discharges from the later evolved centres of the accessory portions which underlie hysteria, epilepsy, and even many of the psychoses. The process of educating the accessory system, and especially the

higher centres of that system, should be regular and systematic; habits of mental scrutiny and self-examination — which, unfortunately, too many religious teachers deem necessary for the welfare of the soul — ought to be discouraged. In one word, education should be made as concrete and objective as possible."

THE LAWS OF DEVELOPMENT AND THEIR BEARING ON EDUCATION.

If this be true, and who shall gainsay it, is it not evident that educational measures of every kind should be selected and coördinated so as to conform to the order and rate of growth and development of the fundamental and accessory neuro-muscular mechanisms of the child and the adolescent? Is it too much to ask that educationists should recognize, ponder upon, and be guided by the laws of development which determine the health and power of the brain-centres, and the health and efficiency of the servants and ministers of those centres, namely, the skeletal muscles? It is true, doubtless, that the laws of development are recognized in a way, in the conventional division of schools into elementary, secondary, and superior; but it is no less true that the bodily and mental characteristics which differentiate children from youth, and both from adults, are deserving of more careful study and much fuller recognition than they have received, hitherto, from teachers as a class, or from those charged with the appointment and control of teachers.

At this point, I would call particular attention to some facts relating to the growth and death-rates of Boston children and youth of school age, since the facts in question seem to me to throw light upon the hygienic and educational needs pertaining to the developmental changes that culminate in full-grown organs and matured functional powers. Though authorities differ as to the age-limits of the successive phases of development which signalize the life of man

in the interval between birth and the attainment of maturity, the following division of that interval into periods is sufficiently accurate for our present purpose: (1) infancy, from birth till the first dentition at 7–9 months; (2) childhood, from the first till the second dentition at 7–8 years; (3) boyhood and girlhood, lasting from second dentition to puberty at 13–14 years: (4) puberty and adolescence, from 13 till the attainment of maturity at the beginning of the 25th year.

SHOWING DEATH-RATES AND SPECIFIC INTENSITY OF LIFE AT INDIVIDUAL AGES, 0-21 YEARS, FOR EACH SEX IN BOSTON, IN THE CENSUS YEARS 1875, 1885, AND 1890, TAKEN TOGETHER.

Age.	Total Number living at each Age.			Total number of Deaths at each Age.			Death-rate per 1,000 living at each Age.			Specific Intensity of Life at each Age.			Age.
	1. Total Males and Females living at each Age.	2. Total Females living at each Age.	3. Total Males living at each Age.	4. Total Deaths of Males and Females.	5. Total Deaths of Females at each Age.	6. Total Deaths of Males at each Age.	7. Deaths per 1,000 Males and Females at each Age.	8. Death-rate per 1,000 F'males at each Age.	9. Death-rate per 1,000 Males at each Age.	10. Specific intensity of Life. Males and Females.	11. Specific intensity of Life. Females at each Age.	12. Specific intensity of Life. Males at each Age.	
0-1 years. .	24.120	11.997	12.123	6,707	3,074	3,633	277.61	256.24	299.51	3.59	3.90	3.33	0-1 years.
1-2 " . .	17.173	8.411	7.762	2,060	989	1,071	119.95	117.58	137.98	8.33	8.50	7.24	1-2 "
2-3 " . .	25.543	12.671	12.872	960	469	491	37.58	37.01	38.14	26.60	27.01	26.01	2-3 "
3-4 " . .	23.811	11.894	11.917	611	295	316	25.66	24.80	26.51	38.97	40.31	37.71	3-4 "
4-5 " . .	21.854	10.809	11.045	462	233	229	21.14	21.55	20.73	47.30	46.39	48.23	4-5 "
5-6 " . .	22.236	11.127	11.109	348	183	165	15.65	16.44	14.85	63.89	60.80	67.32	5-6 "
6-7 " . .	20.794	10.428	10.366	289	150	139	13.89	14.38	13.40	71.95	69.52	74.57	6-7 "
7-8 " . .	20.756	10.283	10.473	197	99	98	9.49	9.62	9.35	105.36	103.86	106.85	7-8 "
8-9 " . .	20.385	10.226	10.159	145	83	62	7.11	8.11	6.09	140.58	123.20	164.01	8-9 "
9-10 " . .	19.960	9.978	9.982	125	51	74	6.26	5.11	7.41	159.68	195.49	134.89	9-10 "
10-11 " . .	20.585	10.325	10.260	103	54	49	5.00	5.23	4.77	199.11	191.20	209.38	10-11 "
11-12 " . .	18.601	9.271	9.330	70	30	40	3.76	3.23	4.28	265.72	309.03	233.25	11-12 "
12-13 " . .	20.375	10.219	10.156	79	44	35	3.87	4.30	3.44	257.91	232.04	290.16	12-13 "
13-14 " . .	18.871	9.560	9.311	98	59	39	5.19	6.17	4.18	192.55	162.03	238.74	13-14 "
14-15 " . .	20.390	10.112	10.278	100	59	41	4.90	5.83	3.98	203.90	171.39	250.68	14-15 "
15-16 " . .	19.776	10.180	9.596	111	60	51	5.61	5.89	5.31	172.10	169.66	188.15	15-16 "
16-17 " . .	20.824	10.798	10.026	137	71	66	6.57	6.57	6.58	152.00	152.08	151.90	16-17 "
17-18 " . .	20.612	10.824	9.788	149	96	63	7.22	7.94	6.43	138.38	125.86	155.36	17-18 "
18-19 " . .	23.025	10.650	10.375	218	80	108	9.46	6.32	10.40	105.61	158.12	96.06	18-19 "
19-20 " . .	22.840	12.206	10.634	237	128	109	10.37	10.48	10.25	96.36	95.35	97.55	19-20 "
20-21 " . .	25.431	14.817	10.614	222	103	119	8.72	6.95	11.21	114.55	137.73	89.10	20-21 "

DIFFERENCE BETWEEN BOSTON BOYS AND GIRLS IN RESPECT TO DEATH-RATE.

The above table is introduced to show that the death-rates of Boston boys and girls differ from each other, particularly as to the years in which the lowest death-rate falls. Later on it will be shown that there is an important relation between the death and growth-rates of Boston boys and girls which in general terms is as follows: *during the period from 10–15 years, the years characterized by most rapid increase in height and weight, are years in which the fewest deaths occur.*

The data contained in columns 1–6 on which the death-rates in columns 7–9 have been computed, are given for the reason that the same or similar data cannot be found, so far as I can learn, in any of the statistical publications of the State of Massachusetts or of the city of Boston. The data relating to total number of deaths found in columns 4–6 are derived from the official records kept in the office of the Secretary of the Commonwealth, and are here compiled and published for the first time. I desire to acknowledge my obligation to Secretary Olin, for allowing my representative access to the official records during the period requisite, viz., three weeks, to compile the figures in column 4–6.

I am under special obligations to Hon. Carroll D. Wright, U.S. Commissioner of Labor in charge of the Census Office, Washington, for returns showing by sex and individual ages the number of persons in Boston, in 1890, which he kindly furnished me in advance of publication; and to Horace G. Wadlin, Esq., Chief of the Bureau of Statistics of Labor of Massachusetts for similar returns derived from the Massachusetts census returns of 1875 and 1885. But for the kindness of those gentlemen, it would have been impossible for me to compile Table V., or to show the cor-

relation which seems to exist between the death and growth rates of Boston children.

Many years ago Dr. William Farr called attention to the fact that the death-rates of English children fell to their lowest point in the period 10–15 years, in which puberty is established, and rose thereafter. That the period 10–15 is the half-decade in all human life in which fewest deaths occur to a thousand living is illustrated in the vital statistics of all civilized countries. It is therefore not surprising that the death-rates of Boston children, from their eleventh to their fifteenth years inclusive, should be lower (see column 7) than in any other of the five-year periods included in the table.

The most important fact disclosed in the above table seems to be this, viz.: that *the years of lowest death-rate, i.e., of greatest power to resist disease, are not the same for the two sexes.* In the case of girls that year is the twelfth; for boys it is the thirteenth; for boys and girls taken together it is the twelfth. That girls should reach their maximum of vigor a year earlier than boys seems to harmonize with the fact that they develop earlier than boys, both bodily and mentally.

The year of lowest death-rate is not invariably the same, but so far as we have any light on this question, *i.e.*, so far as the data on which Table V. is based are concerned, Boston boys are always later by at least one year in reaching their maximum immunity from disease and death. In two of the years under consideration, viz., in 1885 and 1890, the lowest death-rate of boys falls two years later than that of girls. The lowest death-rate and the year of age in which they fall for Boston children is as follows:

	1875.	1885.	1880.	1875-90.
Boys and girls .	2.85 12th year.	3.87 12th year.	3.17 13th year.	3.76 12th year.
Girls	2.28 " "	3.32 " "	3.19 " "	3.23 " "
Boys	2.75 13th "	3.93 14th "	2.86 15th "	3.44 13th "

I am unable to cite any comparative study showing the year of lowest death-rate of boys and girls belonging to different races; but it is safe to assert that the difference in this respect shown to exist in the case of Boston children is neither a fortuitous difference nor a difference peculiar to them, since such study as I have been able to make of the individual-age death-rates of Berlin, Norwegian, and Swedish children leads to similar results. The main purpose of Table V. is to furnish a basis for comparing the death and growth-rates of Boston children with each other, as growth and death-rates are generally inversely proportional to each other. For the sake of making a direct comparison I have computed the specific intensity of life at each age for both sexes (see columns 10–12). Since it is the ratio of the number dying to the number living at each age, specific intensity of life serves to express the immunity from death of any given age-class. It culminates in the year of lowest death-rate.

AGES AND SEX.

Age.	Height.						Specific intensity of Life 1875–'85–'90.		Weight.						Age.
	Height in Centimeters.		Average yearly increase in Centimeters.		Per cent. yearly increase in Centimeters.				Weight in Kilograms.		Average yearly increase in Kilograms.		Per cent. yearly increase in Kilograms.		
	1. Girls.	2. Boys.	3. Girls.	4. Boys.	5. Girls.	6. Boys.	7. Girls.	8. Boys.	9. Girls.	10. Boys.	11. Girls.	12. Boys.	13. Girls.	14. Boys.	
5–6	104.9	105.6	5.2	5.5	4.00	5.20	60.08	67.3	17.99	18.64	1.6	1.9	8.88	10.25	 5–6
6–7	110.1	111.1	5.5	5.1	4.08	4.58	69.5	74.5	19.63	20.49	1.9	1.8	9.69	8.78	 6–7
7–8	115.6	116.2	5.3	5.1	4.58	4.38	103.8	106.8	21.53	22.26	1.9	2.2	8.83	9.86	 7–8
8–9	120.9	121.3	4.5	4.9	3.72	4.03	123.2	164.0	23.44	24.46	2.5	2.4	10.68	9.79	 8–9
9–10	125.4	126.2	[1]5.0	5.1	[1]3.98	4.04	[1]195.4	134.8	25.91	26.87	2.4	2.8	9.26	10.40	 9–10
10–11	130.4	131.3	[2]5.3	4.1	[2]4.06	3.12	[2]191.2	[1]209.3	28.29	29.62	[1]2.9	2.2	[1]10.24	7.43	 10–11
11–12	[1]135.7	135.4	[3]6.2	[1]4.6	[2]4.56	[1]3.39	[3]309.0	[2]233.2	31.23	31.84	[2]4.3	[1]3.1	[2]13.78	[1]9.74	 11–12
12–13	[2]141.9	140.0	[4]5.8	[2]5.3	[4]4.06	[2]3.78	[4]232.0	[3]290.1	[1]35.53	34.89	[2]4.7	[2]3 6	[2]13.23	[2]10.31	 12–13
13–14	[3]147.7	145.3	[2]4.6	[3]6.8	3.11	[2]4.68	162.0	[4]238.7	[2]40.21	38.49	[4]4.4	[2]4.5	[4]10.94	[2]11.66	 13–14
14–15	[4]152.3	152.1	2.9	[4]6.1	1.90	[4]4.01	171.3	[5]250.1	[3]44.65	42.95	[5]3.5	[4]5.6	7.83	[4]13.02	 14–15
15–16	155.2	158.2	1.2	[5]6.9	0.77	[5]4.36	169.3	188.1	48.12	48.59	[3]2.7	[5]6.3	5.61	[3]12.96	 15–16
16–17	156.4	165.1	0.8	2.9	0.51	1.75	152.0	151.9	50.81	54.90	1.6	[3]2.9	3.14	5.23	 16–17
17–18	157.2	168.0	0.1	1.3	. . . .	0.77	125.6	155.3	52.24	57.84	. . . .	2.3	. . . .	3.97	 17–18

The figures printed in bold-faced type serve to emphasize the leading features of the period of acceleration in growth and specific intensity of life.

The salient facts disclosed by Table VI. are these: (1) the period 10–15 years of age is, for Boston children, at once a period of accelerated growth and of accelerated specific intensity of life; or in other words it is the period in which Boston children attain and pass the flood-tide of growth and of their vitality, as measured by their power to resist death; (2) acceleration of growth and of specific intensity of life set in, culminate, and begin to decline earlier for girls than for boys.

So far as growth-rates are concerned this table is based upon the results of the investigation of Dr. H. P. Bowditch, Professor of Physiology in the Harvard Medical School, in regard to the height and weight of 24,595 children (13,691 boys and 10,904 girls) belonging to the public schools of Boston, in the year 1875. Dr. Bowditch's investigation was made by permission of the School Committee and through the co-operation of the principals of schools. Dr. Bowditch was the first to show, on a large scale, that the growth-rates of boys and girls differ from each other. Though the practical bearing of Dr. Bowditch's results has been but feebly grasped by American educationists, his results have been confirmed by numerous scientific investigations in Europe and by a few in the United States. Judging by the frequency with which Dr. Bowditch's results are cited by English, German, Russian, Italian, and Swedish writers, it would appear that those results are more widely known and more highly estimated than any other fact connected with the management of the public schools of Boston.

In this table, figures relating to height and weight are iven in centimeters and kilograms respectively. The figures relating to specific intensity of life are taken from Table V. As the actual rate of growth is more accurately expressed in terms of the relative average-increase in height and weight, than in terms of the actual increment of those variables, I have computed and interpolated the figures

contained in columns 5, 6, 13, and 14. The figures in columns 3, 4, 11, and 12 show the average *amount of growth*. Those in columns 5, 6, 13, and 14 show the average *rapidity of growth* year by year. The figures in columns 1–4 and 9–12 are either taken directly from Dr. Bowditch's tables, published by the Massachusetts State Board of Health, or from Dr. Axel Key's reproduction of those tables in terms of the metric system of numbers.

Inspection of the table, columns 1 and 2, shows that girls are taller than boys of corresponding age during *four* years, viz., 11–14, inclusive; also that the accelerated yearly increase (see columns 3 and 4) in height begins at 9 years for girls and at 11 years for boys; that it culminates in the 12th year for girls and two years later for boys; and ceases in the girls' case at 14, and in the boys' case at 16: and that the growth-rate of the two sexes, given in columns 5 and 6, corresponds closely, though not absolutely, with the rates given in columns 3 and 4.

In respect to weight we find that the girls are heavier than the boys for the *three* years 12–14 inclusive (see columns 9 and 10); also that the accelerated yearly increase in weight begins for girls at 10 and at 11 for boys (see columns 11 and 12), that it culminates in the 13th year for girls and in the 16th for boys, and terminates at 16 for girls and 17 for boys; and that with regard to the percentage growth-rate in weight, expressed in columns 13 and 14, the same condition exists which was noted above in regard to the percentage growth-rate in height.

In respect to specific intensity of life, that of girls maintains a relatively high level from 9–12 inclusive, culminating at 11–13; while that of boys maintains a high level from 10–15, having its culmination at 12–13.

CORRELATION OF GROWTH-RATES WITH DEATH-RATES.

Summarizing the statements contained in the last three paragraphs, we may say that pre-pubertic acceleration of growth in height and weight begins and culminates earlier and is less prolonged in the case of girls than of boys; and that in each case the period of greatest and most rapid growth is the period marked by the highest specific intensity of life, or of lowest mortality.

The year of least mortality and of most rapid growth, both in height and weight, is the twelfth year for girls; while for boys, the thirteenth is the year of least mortality, the fourteenth that of most rapid growth in height, and the fifteenth that of most rapid growth in weight.

The above table shows that specific intensity of life and rates of growth in height and weight decline markedly for both sexes after the sixteenth year. This fact suggests the importance not only of minimizing all influences which hinder, but also of magnifying all agencies which are effective in promoting the growth of school children before their tide of exuberant vitality and of active growth begins to ebb. In affairs of growth and development, as in the "affairs of men," it is the flood-tide, and not the ebb, which "leads on to fortune."

GROWTH AND DEVELOPMENT.

Our "earthly pilgrimage" embraces three stages, viz., (1) that of Evolution or Immaturity, which is *par excellence* the period of growth or increase in size, of development or improvement and increase of functional powers, and of storage of energy; (2) that of Maturity or Completed Development, in which growth and development proceed more and more slowly till they cease, a period of productive activity, of balanced income and expenditures of energy; and (3) that of Dissolution or Decline, marked by excess of expend-

iture of energy, by weakened and decaying functions, and by wasting and degeneration of organs and tissues.

Growth and development characterize the stage of immaturity, as has been said, but since development waits upon growth, the two processes vary in amount and rate in different parts of that stage, considering the body as a whole. Nor should it be forgotten that the several somatic and special mechanisms of the body differ in respect to the order and rates of their growth and development. If the education of children and youth shall ever become thoroughly natural and rational, it will be because the significance of that order and rate, and their relations to life and death, are recognized and heeded to an extent that is nowhere common as yet.

The leading somatic organs emerge from the rudimentary chaos of early fœtal life in the following order, practically speaking: the brain and nervous system; the alimentary system; the circulatory and respiratory systems; the muscles and the skeleton. And after birth the brain maintains its lead both in growth and development over the muscles, until the period of second dentition at 7–8 years of age, when the brain weighs, within a narrow margin, as much as it ever will. In the brain, the parts which preside over the sense organs appear sooner and develop earlier than do the parts which control the motor organs. Complete development of motor ability does not and cannot take place until the muscular instruments or end-organs of the motor brain-centres have attained full growth, which is not accomplished till puberty. The skeleton is not fully consolidated until the twenty-fifth year.

The growth-rates thus far considered are used to express the growth of the body as a whole; but as a matter of fact increase in height is chiefly an increase of length in the skeleton, and growth in weight consists mostly of increase in the weight of the muscles. The adult body is about

three times as tall and twenty times as heavy as that of the infant at birth. Certain facts relating to the growth-rate of some of the leading somatic organs remain to be considered. The following figures, showing the changes brought about by growth, during the stage of evolution, in the ratios of the weight of the brain, the muscles, and the skeleton to the total body-weight, are taken from Foster's Text-Book of Physiology:

Weight of brain in new-born babe	= 14.34%,	in adult	= 2.37	of body-weight.
" skeleton	" "	= 16.70%,	"	= 15.35	"	"
" muscles	" "	= 23.40%,	"	= 43.10	"	"

In other words, in the adult the brain is 3.7 times, the skeleton 26 times, and the muscles 48 times heavier than at birth. It is obvious that if the musculature fails to attain its normal size and weight, the body cannot attain its full size and weight. It is scarcely necessary to urge in the face of such facts that well-directed muscular exercise may powerfully promote normal bodily growth.

MENTAL AND BODILY CHANGES PECULIAR TO THE STAGE OF IMMATURITY.

The stage of evolution or immaturity is of paramount importance, since the formal education of the vast majority of the pupils in our elementary and secondary schools ceases before maturity is reached. This stage may be roughly divided into three equal periods of eight years. Both growth and development proceed during each period, but growth preponderates in the first and second, and development in the third period. The salient features of each period may be grouped as follows:

First Period. — From birth till the close of the eighth year. The whole body grows rapidly in the first two years of life, more particularly in the first year, but it is the "immense" growth of the brain — which attains its full weight

within a few ounces in the eighth year — that signalizes this period most markedly. In the domain of development the sensory organs take the lead and reach a high degree of perfection, though certain of the most essential neuro-muscular mechanisms concerned in the coördination of relatively central movements, also undergo active development, *e.g.*, those concerned in equilibration, locomotion, and vocal utterance. The child is imitative, inquisitive, and acquisitive; but his perceptive powers and his memory develop faster than his powers of discrimination and expression. During this period sensory education may safely be diversified and somewhat specially emphasized; but motor education should be of a more general and elementary character.

Second Period.— From the beginning of the ninth to the end of the sixteenth year. This is distinctively the period of most rapid growth in height and weight. In increase of weight the muscles play the leading part. Motor coördinations reach a higher degree of development than were possible during the preceding period, though they are not fully perfected till adolescence is nearly completed. "The process of perfecting motor coördinations cannot be said to be complete," says Dr. Clouston, "while the awkward, ungraceful motions of hobbledehoyhood last, and until we reach the grace and poetry of body-motion of the maiden of twenty-three, and the dexterity, force, and swiftness of coördination of eye, hand, and body seen in the male cricketer or lawn-tennis player of five-and-twenty." As Dr. Clouston has pointed out, one of the most marked features of this period is the coördination of motion and emotion.

In this period the individual diverges from the neutral condition of childhood and takes on the distinctive characteristics of youth or maiden. The changes in body, mind, and character which result from the establishment of puberty are profound and lasting in both sexes, though they transpire more rapidly and proceed further in the gentler sex in this period.

Self-consciousness is awakened, self-confidence is quickened and new impulses, appetencies, and ambitions arise which prompt the adolescent to try all things and every body. The child yields to authority and accepts dicta with comparatively good grace; but the youth demands reasons and must be convinced, or at least persuaded, by his teachers and governors — he may be led, but he resists being driven. Educational methods, therefore, particularly during the second half of this period, should savor more of incitement than compulsion. The formal education of the great majority of public-school pupils terminates in this period, since so soon as they are fairly well-grown their services become marketable. Those who are destined to the ruder forms of labor or the humbler crafts and occupations enter the lowest ranks of wage-earners, while as yet the privileged youth selected by their parents or by circumstances to engage in pursuits which demand special aptitudes or technical training are too undeveloped, in most instances, to make rational choice of a vocation.

On the whole, since the period of most active growth appears to be followed by one of comparative exhaustion, when the organism is peculiarly susceptible to disturbing and deterrent influences, the second may be considered, from the hygienic standpoint, as the most critical of our three periods. Exhausting constitutional disease, excessive mental or bodily exertion, under-feeding, ill-judged deprivation of muscular exercise, may readily lead to irremediable stunting or enfeeblement, especially in those who are city-born and city-bred. If physical education be neglected or misdirected during this period, if it be deferred to a more convenient season, it cannot accomplish its perfect work either as regards the promotion of health or the development of the motor powers of the brain.

Third Period. — From the beginning of the seventeenth to the close of the twenty-fourth year. This, the period of

established adolescence, is distinctively a period of development, — of development of character as well as of bodily and mental faculty. The life of the race begins to be reflected in the life of the individual, — to whom a higher and wider range of activities is opened through the development and perfecting of his higher fundamental and accessory neuro-muscular mechanisms. Emotion is coördinated with self-chosen aims and ideals: self-directed actions increase in number and effectiveness; and the individual is prepared by special forms of technical training to enter upon his life-work as an adult, independent member of society.

During intra-uterine life, the human being passes through phase after phase of development, in which some features of the organism resemble the adult structures of certain lower forms of animal-life. Similarly the adolescent, in the stage of his advancing development, passes through phases of thought and feeling that savor strongly of semi-civilized and barbarian culture. He epitomizes, so as to speak, the developmental history both of his nearer and remoter ancestors. For not a few the stress and struggles of development prove a breaking strain, and adolescent insanity results.

SUMMARY VIEW OF PERIODS OF IMMATURITY.

During the stage of immaturity the natural course of events seems to be as follows: brain growth, which is the leading event in the first period, culminates in the seventh or eighth year; and the most rapid development of the sensory organs and the perceptive faculties, which determine the elaborateness, complexity, and precision, in short, the efficiency of our movements, takes place in the same period. The muscles, which are to serve as the executive instruments of the brain, do not attain full growth till towards the end of the second period. Then, when both brain and muscles are fully grown, neuro-muscular development enters upon its most active and important stage, *i.e.*, in the third period. Measures

that directly promote growth are mainly hygienic measures, and measures that directly promote development are mainly educative. An intelligent combination of hygienic and educative measures is called for, both in the sensory and motor education of the individual, during each and all of the three periods; but, during the whole of the first and the first half of the second period, hygienic forms of exercise should preponderate, while during the last half of the second and the whole of the third period educative forms of exercise should be assigned the leading part, — provided that practically normal growth and health have been secured to start with.

EDUCATIONAL REQUIREMENTS PECULIAR TO STAGE OF IMMATURITY.

Elementary education is naturally assigned to the first and second periods. Secondary education usually begins in the second, and either terminates in the third or merges into superior or technical education. According to the statistical tables contained in Superintendent Seaver's last report, the elementary public schools of Boston, on January 31, 1894, included upwards of 94 per cent. of all the pupils in the day schools, while less than 6 per. cent. were found in the secondary schools. Classifying the 65,588 pupils in question in accordance with the age-scale used above, it appears that 26.8 per cent. of them are in the first, 67.5 per cent. in the second, and only 5.69 per cent. in the third period of immaturity. It is plainly obvious, then, that the main work of our schools is elementary and general, and that training and not culture should be their end and aim. Culture presupposes and is based upon fully developed and disciplined powers, which are precisely the powers that the pupils in elementary and secondary schools lack. It is therefore a misleading use of language to apply the term "physical culture" to school-gymnastics and school-sports. Physical training is what our school-children need, but have never had in the

measure adequate to their needs. It may be that the day will come when our colleges and universities shall undertake the "physical culture" of their students; but their efforts will be barren and fruitless unless they shall first induce the secondary schools to do what comparatively few of them even pretend to undertake at present, viz., provide intelligently and adequately for the physical training of the youth they profess to educate.

THE LEADING PRINCIPLES OF PHYSICAL TRAINING AND THEIR IMPORTANCE.

If it be true, as I have endeavored to show in the preceding pages, that the neural element is a necessary and dominant factor in muscular exercise, so called; that muscular movements serve as an index of the constitution and condition of motor brain-centres, and may be made to serve as a means of securing the orderly and natural growth and development of those centres; that there is a definite order of evolution in the neuro-muscular mechanisms, as in the other somatic organs; that the growth-rates of the body and brain are correlated with their power to resist disease; that the fluctuations in specific intensity of life and rates of growth of the two sexes vary in height and amplitude during the second period of immaturity; and that the ages of more than two-thirds of the pupils in the public schools of Boston fall within the period just mentioned, — it will hardly be gainsaid that the principles underlying systematized muscular exercise — which is physical training — are worthy of serious and careful consideration from all who are intrusted with the responsibility of determining the policy, or of administering the practical affairs of elementary and secondary schools.

It is implicitly and explicitly denied by many that education is a science as well as an art. American educationists, as a class, have been rather disinclined to accept and apply

the plain teachings of modern physiology and psychology with regard to the natural history of man, and the mutual interdependence of his bodily and mental parts. It is perforce a slow and difficult matter for a class, whose leaders are not fully emancipated from the thraldom of an arrogant and overweening humanism, to readjust their aims and methods so that they shall harmonize with the results of proven science. It is vastly easier for them to regard the rising generation as mere adults in miniature, and to judge, admonish, and instruct children and youth in accordance with the standards of mental and moral excellence that obtain among men and women, than it is to ascertain the essential characteristics which differentiate the child from the youth and both from adults, and to employ only such methods as are natural and appropriate to the age, sex, and individual peculiarities of their pupils. Moreover, "practical educators have been loth to admit the legitimate claims of physical education, either as a branch of practical hygiene, or as a pedagogic discipline, for the reason that the subject has been ridiculously exploited, at times, by doctrinaires and dabblers as a safe, sure, and speedy means of hastening the millennium.

The motor element in all forms of instruction and practice is so large and vital; physical education has so many points of contact and such numerous and intricate relations with mental and moral training; the range in which its principles are applicable is so wide and diversified; and critical, comprehensive views regarding its nature and limitations are so little in demand, that the larger and more weighty claims of physical training to the dignity and privileges of a coördinate department of education easily fail of recognition in the confusion due to the conflicting and often preposterous claims of the partisans of one or another "system," on the one hand, and of self-elected "professors" and practitioners of one or more of the thousand and one minor subdivisions of physical training on the other.

SIGNIFICANCE OF THE TERM "PHYSICAL TRAINING."

It seems to me that, as it is generally employed, the term "physical culture" is a misnomer, and that it had better be eschewed, when one undertakes to discuss the forms of muscular exercise that are best adapted to meet the needs of pupils in elementary and secondary schools; since it is not properly synonymous with the terms "physical training" and "physical education" which are interchangable according to the best usage. Moreover, as usage varies not a little with regard to the two terms last mentioned, it may be well to consider their significance before proceeding further. The term "physical education" has been frequently employed to signify all such measures as are classed by the best writers, along with exercise, under the head of personal hygiene, *e.g.*, dress, diet, bathing, etc. When employed in this sense the term manifestly means too much. Whereas, when physical training is made to include only such particular forms of exercise as respiratory gymnastics, elocutionary drill, Delsarte exercises, massage, posturing, the manual-of-arms, cudgel or sword-play, or the inchoate games that serve for the recreation of school-children at recess-time, the term means too little. For our present purpose, physical training may be defined as the regulated practice of some form of muscular exercise, under such conditions as serve to promote the health of the organism or to develop and discipline its motor functions, either in a general or special way.

GENERAL AND SPECIAL FORMS OF PHYSICAL TRAINING.

Inasmuch as muscular exercise is resorted to for a variety of purposes, its aims may be classified as recreative, hygienic educative, and remedial. In its wider sense physical training, therefore, includes childish games, athletic sports, gymnastics, manual training, and all forms of exercise that

are employed, of set purpose, to develop motor ability of a special or professional sort. Success in language-training, or in military, manual, and industrial training, is conditioned on the intelligence and skill with which the principles of physical training are applied by the teachers of those arts; since it is through the assiduous drilling of their neuro-muscular mechanisms that actors, elocutionists, musicians, marksmen, draughtsmen, and penmen, as well as ploughmen, boatmen, soldiers, and craftsmen are enabled so acquire their technique.

The great majority of the pupils in our schools are too unripe to profit from such mental training as is mainly technical; accordingly our schools are wisely organized for general and preparatory training. In the domain of physical education it is equally important not to confound general and special training either in thought or practice. Reason and experience forbid the substitution of military drill, sloyd, manual or elocutionary training for gymnastic and athletic training, or *vice versa*. It is unfortunate, to say the least, that the ardent advocates and promoters of specialized forms of motor education so often fail to appreciate the necessity of conforming their measures and methods to the laws of nature. The introduction of sloyd and manual training and of military drill into the curriculum of urban schools enhances and intensifies the need of school gymnastics and athletics, since it is demonstrable that sloyd, manual training, and the manual of arms, unless they are based upon and accompanied by sound bodily training of a more general nature, tend to produce awkwardness and deformity. Competent experts in surgery, ophthalmology, and hygiene have shown that the customary systems of school-seating and the conventional methods of teaching penmanship are largely responsible for much of the impaired vision and spinal curvature found among school-children. It is devoutly to be hoped that such intrinsically valuable branches of physical

education as sloyd and manual training shall not, through haste and heedlessness, be rendered liable to similar criticism and attack.

Physical training, though an ancient art, is so new a science that even its most zealous advocates must admit that very much remains to be done before an exhaustive and absolutely satisfactory statement as to the hygienic and educational values of its leading general and special forms can be drawn up; but this condition of affairs does not justify indifference or aversion to efforts already initiated in various parts of the world for making good the losses which accrue to city children, as a class, from the deprivation of adequate facilities for play and exercise in the open air. Enough is known and has been proven by experience with regard to the nature and effects of muscular exercise, to warrant much more vigorous and comprehensive measures than have been taken as yet in any American city, to secure the benefit of appropriate forms of physical training to the pupils in all grades of the public schools. To this end, all efforts to add to the number of baths and of swimming-schools, of play-grounds and gymnasia, or to enhance the efficiency of those we have, should be heartily seconded and promoted. If it were the custom in Boston, as in many foreign cities, to provide the public schools with spacious grounds, well adapted to serve as play and gymnastic grounds, our school-yards could be made much more serviceable than is at present possible, in the interests both of formal and informal physical education.

CHARACTERISTICS OF OUR PRESENT SYSTEM OF SCHOOL GYMNASTICS.

Our present system of school gymnastics is good so far as it goes, but it is from the nature of circumstances necessarily restricted in its range, since leaving out of account girls' classes belonging to the Charlestown and Brighton High Schools, which are specially privileged in having small

collections of Swedish gymnastic apparatus, no provision has been made for instruction outside of the single branch of the so-called "free-standing-movements," which do not require apparatus of any sort. Free-standing-movements are invaluable in the preliminary motor education of the child, and should not be neglected during the two later periods of immaturity — as they afford a ready and effectual means of developing the principal forms of motor coördination, which are requisite to acquiring normal habits of carriage in sitting, walking, running, and jumping. But free-movements alone do not fully meet the bodily and mental needs which characterize the phase of adolescence, in which are found the majority of our pupils who belong to the high school and the two upper classes of the grammar-school grades. Hence all pupils above the second class of the grammar school should have instruction in Swedish apparatus-gymnastics, which are more effectual than free-movements in promoting growth and the development of agility, strength, endurance, and the higher forms of presence of mind and self-control. So long as apparatus-gymnastics do not constitute an organic part of our school gymnastics, so long will it be idle to claim that the vote of the school committee ordering "*that the Ling or Swedish system of school gymnastics be introduced into all the public schools of this city*" has been carried into effect. It would be easily practicable to expand our present partial and rudimentary system of physical training into a comprehensive system that should be practically adequate to the needs of all classes of pupils. *The question here is one of will, not of way.* Possibly, if Boston school children were as amply provided with play-grounds, gymnasia, and instruction in sports and gymnastics as those of Berlin, our City Registrar would have occasion to record fewer deaths, and more births as time elapsed. Our average excessive loss of school-children, judged by the Berlin standard of specific intensity of life, at present amounts to one hundred lives annually.

THE CHARACTERISTICS OF ATHLETICS AND GYMNASTICS — NEED OF BOTH IN A BROAD SCHEME OF PHYSICAL TRAINING.

Experience shows that out-of-door games, athletic sports, and systematic gymnastics are the forms of exercise which yield the best results in the physical training of school children. The plays of the kindergarten, the athletic sports to which British and American youth are so devoted, and the systematized gymnastics of the Swedes and Germans, have all developed from one germ — from healthful play; the vital energy of that germ is found in the universal and ineradicable impulse of all healthy children to play.

In the athletic sports of young men, we see the highest and fullest expression of the play instinct. The most essential difference between athletics and gymnastics is one of aim. The aim of athletics, unless they are of the illegitimate professional sort, is pleasurable activity for the sake of recreation; that of gymnastics is discipline or training for the sake of pleasure, health, or skill. We have but to compare the aims, methods, and results of each, and to call to mind the characteristics of the peoples that have most affected athletics on the one hand and gymnastics on the other, to perceive that gymnastics are more highly developed and present more features of educational value, where large numbers are concerned. Gymnastics as compared with athletics are more comprehensive in their aims, more formal, elaborate, and systematic in their methods, and are productive of more solid and considerable results under the artificial and restrictive conditions of city life. I have no disposition to disparage athletic sports. I would that they were more general and better regulated than they are in our country. I believe that they are valuable as a means of recreation, that they conduce to bodily growth and improvement, and that their moral effects may be of great value, since they call for self-subordination, public spirit, and coöperative effort,

and serve to reveal the dominant characteristics and tendencies as regards temper, disposition, and force of will of those who engage in them. But athletics bear so indelibly the marks of their childish origin, and are so crude and unspecialized and expensive in their methods, as to render them inadequate to meet the requirements of a thorough-going and comprehensive system of bodily education. The requirements of such a system demand a judicious admixture of sports and gymnastics, of free play and formal guidance, to the end that each may help and reënforce the other.

No comprehensive system of physical training can be considered safe or rational whose exercises are not chosen and ordered so as to meet the varied and changing needs, in respect to their sex, age, health, strength, and mental capacity, of the individuals to be trained. The results which should be secured by such a system are briefly these: easy and graceful carriage of the head and limbs; a broad, deep, and capacious chest, in which the heart and lungs, developed to their normal size and strength, shall have free, full, and regular play; square shoulders; a straight back; fully developed and well-rounded limbs; and the power to execute with ease, precision, and economy of force such movements as are involved in habitual actions, in the simpler exercises calling for strength and skill, and in the performance of ordinary gymnastic and athletic feats.

IMPORTANCE OF THE EDUCATIONAL EFFECTS OF EXERCISE.

It is well to emphasize the beneficial effects of muscular exercise upon the nutrition of the body and its component parts, since in the last analysis health is very largely a matter of nutrition. I am not disposed to deny that ample justification for making physical training a coördinate branch of instruction in city-schools is to be found in the undoubted efficacy of muscular exercise to promote general bodily

health; but equally weighty arguments for the efficient organization and generous support of physical training may be derived from the educational value of systematized muscular exercise. Indeed, I am convinced, both from reflection and observation, that the hygienic ends of physical education cannot be attained in full measure by instructors and trainers who do not recognize and strive to realize its educative ends as well.

DU BOIS-REYMOND ON THE NERVOUS ELEMENT IN EXERCISE.

Most teachers, unfortunately, derive their notions of exercise from text-books on physiology, since, hitherto, the normal schools have failed, for the most part, to furnish their pupils with sound and thorough instruction in either the theory or the art of physical training. "We seek in vain," says Du Bois-Reymond, the veteran professor of physiology in the University of Berlin, "in most physiological text-books for instruction respecting exercise. If it is given, only the so-called bodily exercises are generally considered, and they are represented as merely exercises of the muscular system; therefore it is not strange that laymen in medicine, teachers of gymnastics, and school teachers believe this. Yet it is easy to show the error of this view, and to demonstrate that such bodily exercises as gymnastics, fencing, swimming, riding, dancing, and skating are much more exercises of the nervous system, of the brain, and spinal marrow. It is true that their movements involve a certain degree of muscular power; but we can conceive of a man with muscles like those of the Farnesian Hercules who would yet be incompetent to stand or walk, to say nothing of his executing more complicated movements. For that we have only to add to our conception the power of arranging the motions suitably, and of causing them to work harmoniously. . . . All the bodily exercises we have mentioned above are not mere muscle-gymnastics, but also, and

that preëminently, nerve-gymnastics, if, for brevity, we may apply the term, nerves, to the whole nervous system. . . . Man is adapted to self-improvement by means of exercise. It makes his muscles stronger and more enduring; his skin becomes fortified against all injury; through exercise his limbs become more flexible, his glands more productive; *it fits his central nervous system for the most complicated functions; it sharpens his senses; and by it his mind, reacting upon itself, is enabled to augment its own elasticity and versatility.*"

PHYSICAL TRAINING NECESSARY FOR DEVELOPMENT OF HEALTH AND FACULTY OF THE BRAIN.

If we once admit, as we must, that thought and feeling, judgment and volition, are inexpressible and ineffectual except through motor acts, and that motor acts are animated and controlled by the central nervous system, the inference is clear that physical training is an essential element in the development of mental health and power. Since motor acts, like mental acts, vary greatly in their nature and effects, equal educational value is no more to be ascribed to all forms of physical training than to all forms of mental training. This is tacitly recognized in practical life. Thus the technique of the ploughman or the wood-chopper is more readily acquired and commands a lower wage than that of the violinist or the surgeon, — just as the habitual mental operations of the book-keeper are of a lower order and less highly prized than those of the engineer or the astronomer. The principles of physical training are applicable throughout a wide and varied field, since those who aim at intellectual pursuits, no less than those who are destined to become day-laborers or mechanics, stand in need of physical training of a general nature, to the end that they may have vigorous health and serviceable muscular powers; and both classes also require instruction and practice in such forms of

nical motor drill as pertain to their several callings. ıdly speaking, though the various general and special ıs of physical education may differ much in respect to nanner in which certain customary forms of procedure :ombined and accentuated, still the leading principles of ıical training are essentially the same in kind in all its ches. If teachers of reading and of foreign tongues, as as those of writing, drawing, and of manual training, more apt at recognizing and turning to account the :iples of physical training which are demonstrably ap- ble in their respective subjects, there would be less ısitiveness and indifference, both among the leaders and ank and file of the educational armies of the United ɔs, to the just claims of gymnastic and athletic forms of ical education to a dignified and influential place in the tific order of our times.

TERING A MOTOR DISORDER DUE TO FAULTY METHODS OF TRAINING.

uttering is a functional disturbance of the central nervous m, characterized by involuntary, disorderly spasms in in muscles concerned in vocal utterance. It is fre- tly described as a school-disease, inasmuch as it is most ılent among persons of school-age, and is largely due to y or misguided methods of instruction in speaking and ng. Experience shows that the most efficacious means for its prevention and cure are found in the intelligent f certain general and special forms of muscular exercise mbination. Therefore I have made a special study of ıevalence of stuttering among the pupils of our public ls, since stuttering affords striking evidence of the ief which may arise at the very threshold of common- l education through the failure of teachers to appre- the doctrine of muscular exercise which I have vored to set forth in this report.

NATURE OF NORMAL SPEECH.

Audible speech is a tissue of sound-waves in which musical sounds serve for woof and unmusical noises for warp. The raw material out of which our speech is wrought is found in the bellows-blast of air which is driven from the lungs, during the expiratory phase of respiration, through the slit of the glottis, whose membranous edges, the vocal cords, are thrown into vibration. The vibrations of the vocal cords derive their character from the action of the laryngeal muscles, and being communicated to the tide of laryngeal air give rise to the sound we call voice. As the stream of vocalized air continues its upward and outward course, through the tubular passage which leads from the larynx to the lips, it becomes subjected to a series of interruptions and resonations brought about by the muscles of articulation. Thus certain laryngeal sounds are intensified and certain noises termed vowels and consonants are added to or superposed on them, and articulate speech is the result. The production of articulate speech, then, consists of a highly complicated series of movements, in which three sets of coördinated movements — which are effectuated by muscles seated in the chest, the throat, and the mouth respectively — are coördinated into a single act.

DIFFERENT ORDERS OF MOVEMENT INVOLVED IN SPEECH.

Mercier's characterization of the movements involved in speech is in point here. "In vocal utterance," he says, "there are three sets of movements, those of breathing, those of phonation, and those of articulation. Breathing is effected mainly by the most central of all muscles, and its movements occur in simplest succession and in brief and simple rhythm. Voice is produced mainly by movements of the larynx — movements that are midway between the central movements of breathing and the peripheral move-

ments of articulation, and the sequence of these movements is intermediate between those of breathing and those of articulation. . . . Now advance to the extreme periphery and take the movements of articulation. Each spoken word, like each written word, requires for its formation several movements succeeding each other in definite order, at definite intervals; and each sentence is a long sequence made up of many such short sequences arranged in a definite order. The number of different movements of the articulatory apparatus that go to make up even a short speech is therefore enormous, and these movements and sequences of movement occur rarely, and at intervals that are extremely irregular." To this we may add that the neuro-muscular mechanisms of breathing are fundamental, while those concerned in phonation and articulation are relatively accessory, the latter being particularly so.

It is hardly necessary to show, though it may well be stated, by way of reminder, that of the three orders of movement, mentioned above, articulatory movements are not only more numerous, varied, and arhythmical than those of voice and breathing, but are also more precisely limited, more highly specialized, more artificial, more easily disturbed and marred, and require more careful, prolonged, and intelligent training to secure their full development. It is important, also, to remember that the nerve-centres which represent the three different orders of movement pertaining to speech-production are found in different levels of the cerebro-spinal system, and become organized and fully capable at different periods in the evolution of the organ of mind.

KUSSMAUL'S THREE STAGES OF SPEECH-DEVELOPMENT IN THE CHILD.

The leading work on the pathology of speech is "Die Störungen der Sprache von Dr. Adolf Kussmaul, Professor

in Strassburg." Kussmaul, like the late Charles Kingsley, was once a stutterer. In the extracts from Kussmaul which follow, I quote from the third edition of his work published in 1885: "Since articulation is learned and consists of practised, coördinated movements, we must needs consider how we acquire it. We may distinguish three developmental periods here:

"(1.) Children, even before the close of the first three months of life, at about the time they begin to make grasping movements, when in a cheerful mood, are wont to indulge in various sounds, of themselves. This "babble of the suckling" consists chiefly of lip-sounds and vowels, though it includes linguals and palatals also. They are partly the familiar sounds of our alphabet, though not in their later hard and fast form, and partly strange sputtering, hissing, snarling, clucking sounds that are difficult or impossible to represent by our letters; something like pf, pfi, fbu, tl, dsi, qr, etc. They are joined together only in a loose and accidental fashion. The second class of sounds, which I will call *wild sounds*, are of a purely reflex nature. They are a product of the same impulse to muscular action which prompts the child to strike with the hands and to kick with the legs as an exercise preparatory to grasping and walking.

"One may look on them as the primitive sounds, given to men in the beginning, out of which all the sounds which our alphabet of to-day contains have been formed.

"(2.) Later, when the child hearkens and is learning to distinguish sounds, at the time when it is learning to seize objects with its hands and to use its legs in creeping and walking, and when the impulse to imitation breaks out with all its aboriginal might, — these wild sounds become gradually supplanted by the ordinary sounds of the mother tongue. There is a close correspondence between the early awakening of the musical sense and the fact that the child correctly catches and repeats vowels and diphthongs before it can re-

peat consonants in words that it hears. Its imitative power does not keep pace with its understanding of words. The child understands some words without being able to imitate them, and imitates many without being able to understand them. The great difference between understanding and perception on the one hand, and articulation on the other, appears in a striking way at the very beginning of speech-development.

" Still these first, firmly articulated sounds and syllables are of the simpler sort. With a, aa, ho, u, da, etc., the child expresses its contentment, wonder, dislike, etc. These are purely sensory reflexes, or interjections. The imitative sounds are the familiar baba, bebe, dada, dodo, atta, etc., which nurses practise with their charges. At first the child does not connect any determinate intuition with mama and papa; the spoken word is imitated only as an auditory image, and children only slightly apprehend the meaning which the women attribute to it.

" Among children, the time varies greatly at which pleasure in imitating sounds awakens, and their aptitude for imitation varies quite as much. At first the words of the imitative child bears only a distant resemblance to the words it hears, and are intelligible, for the most part, only to its familiars; but this improves with increasing rapidity. Very clever children sometimes attain considerable facility before the close of the first year. Others first show pleasure in articulate speech in the second half of the second year, or later, and make very slow progress.

" (3.) The child learns, in the third stage of its development, to associate definite images of objects with familiar words, which are gradually changed into ideal conceptions. Now, for the first time, speech becomes an expression of thought — interjections and onomatopoeia pass over into true diction. Ofttimes not until after long use of a word does its meaning flash, as it were, in an instant upon the

child, and the marvellous fusion of idea and word takes place, and the beginning of ideal speech is effected."

THE PATHOLOGY OF STUTTERING.

"Stuttering is a spastic neurosis of coördination, which hinders the utterance of syllables by convulsive contractions — at the stop points for vowels or consonants in the articulation-tube, which may occur either at the beginning or in the course of hitherto unimpeded utterance. The articulation of each individual sound is correctly performed. The disorder does not consist in difficult articulation of letters but of syllables. In the connection of consonants, particularly of explosives with succeeding vowels, more rarely in pronouncing syllables that begin with a vowel, speech becomes obstructed, and the initial sound of the syllable or the last sound of the preceding syllable is repeated, usually many times, till the impediment is overcome and the person can go on with his utterance. This spasmodic inhibition is not noticeable at all times; the stutterer has periods of speaking without difficulty."

"If we examine more closely the condition that, in stuttering, prevents the proper joining of syllables, we find that the three forms of muscular action concerned, viz., the expiratory, vocalic, and consonantal, are not coördinated. The regulating mechanism of the nerve-centres which bring about the harmonious interplay of these muscles in attuning the sounds which make up the syllables, or as Merkel puts it, in vocalizing the sounds, are thrown into disorder by insignificant peripheral excitations, and still more frequently by excitations of central origin. The three muscular actions mentioned above, which coöperate in the articulation of every syllable, are not coördinated either as to the force or the duration of their contractions; consequently the stream of air requisite for speech is deficient in tension sufficient to overcome the opposing tension of the vocalic and conso-

nantal muscles. On the one hand, the action of the breathing muscles concerned in speech is at fault, and on the other, the action of the vocalic and consonantal muscles is convulsive. The contractions of these muscles, instead of proceeding quietly at normal intervals, take on the form of tonic or clonic spasms."

DISTINCTION BETWEEN STUTTERING AND STAMMERING.

"It was not till the third decade of the present century that the distinction between stammering and stuttering was sharply drawn. Schulthess, a Swiss, deserves the chief credit for it. Stammering is sometimes a congenital and sometimes an acquired defect; sometimes it is functional only, being due to bad training and insufficient exercise; sometimes it is of an organic nature. The organic cause for it in some cases lies in the central nervous system or in the motor nerves of speech; in others in the peripheral organs of articulation, the tongue, palate, etc."

German and French writers recognize and emphasize the distinction above noted. English writers for the most part ignore it, or are loth to admit it. Dr. H. Gutzmann, of Berlin, whose "Vorlesungen über die Störungen der Sprache und ihre Heilung. Berlin, 1893," easily holds first place among recent works on speech-disorders, says, "In stuttering we have to do, as we have seen, with muscle-spasms which constitute a hindrance to fluent speech; while the stammerer speaks fluently and without any trace whatever of involuntary muscular movements. Among stutterers simultaneous by-movements always present themselves, but never among stammerers. Stuttering is a failure in speech, stammering a failure in pronunciation."

Stuttering, then, involves a lack of coördination in the neuro-muscular mechanisms concerned in vocal utterance. Dr. Marshall Hall considered it to be "a partial chorea,"

and we may for general purposes characterize stuttering as a St. Vitus' dance of the finer, more peripheral muscles of speech.

THE BREATHING MUSCLES USUALLY AT FAULT IN STUTTERING.

Though any one or all of the series of organs concerned in producing speech may be affected in one who stutters, the respiratory muscles are almost certain to be at fault. "Stutterers always lack," says Kussmaul, "that control of the breath which is requisite for speech. They inhale too little air for their purposes, are not sufficiently economical of it, allow it to escape unused, and sometimes are obliged to draw breath in the middle of a word." Experience has shown abundantly that, unless the central breathing muscles are first set right, efforts directed toward restoring the co-ordinated action of the throat and mouth muscles are largely wasted. It is a most significant fact that those who are most successful in the treatment of stuttering have instinctively, if not wittingly, taken the law of the evolution of the nervous system as their guide. As a rule, they begin their efforts with gymnastic exercises of the breathing muscles, and later on direct their attention to developing normal habits of action, first in the muscles of phonation and then in those of articulation. In other words, their training of the accessory neuro-muscular mechanisms is based on the preliminary development of the fundamental and intermediate mechanisms of the series. What is this but the application of the principles of physical training?

STUTTERING A NEUROSIS OF DEVELOPMENT.

Though stuttering is aggravated by conditions which heighten the susceptibility of the nervous system to disturbing influences, such as occur during the period of second dentition and the onset of puberty, it does not follow that

stutterers, as a rule, are weak and sickly persons. Indeed very many, if not most stutterers, are the victims of bad example and neglect rather than of poor health. Clouston in his "Neuroses of Development" assigns stuttering and backwardness in speech a prominent place among the neuroses especially liable to occur in what he denominates "the period of most rapid brain-growth, of special sense education, and of the development of the leading motor coördinations," viz., the period from birth to seven years of age. It is during this very period that most children enter school, and are launched upon intellectual pursuits by being taught the rudiments of the art of reading aloud. To read aloud correctly, the reader must be able to do two things: firstly, to recognize and associate the letters which are arbitrarily used as symbols of significant sounds; and secondly, he must be able to reproduce correctly and clearly the sounds symbolized by the printed or written characters. The first step involves a mental act; the second step is more largely a motor act; but, so long as it remains a novel or habitual act, it calls for a considerable degree of attention or mental effort. If the learner's perception of sounds be dull, if its powers of utterance be undeveloped or defective — unless the teacher be an unusually acute or watchful person — it is a comparatively easy matter to induce stammering or stuttering among Abecedarians.

H. Gutzmann declares that fully one-half of the children who enter school [in Prussia?] are not fully developed as to their powers of vocal utterance.

Given a shy, sensitive, or backward child and an overworked, breathless, nagging teacher, and mental dulness or hesitancy may readily be driven to express itself in halting or disordered speech; infantile inability to utter certain sounds correctly may pass into confirmed stamme ; or disordered, convulsive action in one or more of the speech-producing mechanisms become the fixed habit of st ring.

Once let a class become infected, and the contagious influence of bad example may contribute powerfully to the spread of stammering and stuttering among school-children. To my mind it is quite as needful for the teacher of reading to apply the principles of physical training to the prevention of stuttering as for the vocal trainer to apply those principles in curing it. The training of the vocal organs involves so much exercise which is essentially of a gymnastic nature, as to lead me to hold that if the motor education of the younger children in our schools were properly organized in the departments of free play and gymnastics, a considerable amount of stuttering might be prevented. But so long as teachers in the kindergarten and the primary schools are not taught and obliged to follow the most natural and rational methods of teaching speech and reading, the schools are likely to deserve the appellation of "nurseries of stuttering" which has been bestowed upon them by A. Melville Bell, the well-known inventor of visible speech.

"SCHOOLS THE NURSERIES OF STUTTERING."

Professor Bell's eminence as a student of phonetics, and his long experience as a teacher, entitle his opinion in this connection to great weight. So long ago as 1866 he wrote as follows: "No part of education is, in general, so lightly esteemed as that of first learning to speak and read; yet, rightly considered, none is of more consequence. First impressions are the deepest and strongest, and the lessons of the Abecedarian are the most abiding. The first governess, tutor, or school-master, should be a model of distinctness in his own practice, and should be, also, intimately acquainted with the physiology of articulation, that he may, both by wise precept and potent example, mould the plastic mouth to grace, and give easy play to the delicate machinery of speech. *With a proper initiatory training, and school surveillance, stammering, and its train of silent sorrows, would be altogether unknown.*"

There is a voluminous literature on stuttering and stammering; but much of it, owing to the prevalence of "stutter-doctors" and fanatical elocutionists, is unscientific and worthless. The subject has not received, hitherto, the attention which it deserves from the teaching class, or those to whom teachers look for inspiration and guidance. Strange to say, our educational literature, so far as I am able to learn by inquiry and search, does not contain a comprehensive and satisfactory study of the psycho-physics of reading aloud. Yet psychology is the shibboleth and war-cry of our normal schools!

GERMAN EXPERIENCE IN ABATING STUTTERING IN SCHOOLS.

Within the last ten years, however, educational authorities in Germany, the Prussians being in the lead as usual, have begun to attack the stuttering habit in its breeding-ground, *i.e.*, in the elementary schools, by forming special classes for stutterers under public-school teachers who have received special training in the physiological method of securing normal utterance. The movement grew out of the teachings and writings of A. Gutzmann, an accomplished and successful teacher in the City School for Deaf Mutes, in Berlin. In 1886, a Potsdam teacher, who had attended Gutzmann's courses of instruction, was placed in charge, by the Potsdam school authorities, of an experimental class made up of twelve stutterers. After about three months' instruction, nine of the class were able to speak and read quite fluently and normally. So a second class was formed in 1887. In 1887 investigation showed that 1.22 per cent. of the children in the Folk-schools of Elberfeld were stutterers. Two teachers were sent to Berlin to familiarize themselves with Gutzmann's method, and on their return were placed in charge of two classes of stuttering school-children. In 1889, Dr. von Gossler, the Prussian Minister of Education, issued a circular calling the attention of the Inspectors

of Schools throughout the kingdom to the success of the Potsdam and Elberfeld experiments, and recommending the formation of similar classes wherever a considerable number of stutterers should be found in the schools. Since 1889 such classes have become quite common in other parts of Germany, as well as Prussia. Those who wish for detailed information regarding this movement in Germany will do well to consult Gutzmann's "Medizinisch-pädagogische Monatsschrift für die gesammte Sprachheilkunde," now in its fourth volume. The December number, 1891, contains a list of 190 persons, — 180 teachers and 10 physicians, — who had taken Gutzmann's normal course; and mentions no less than 32 towns and cities in which school-courses for stuttering children had been held up to that time. In the same journal for 1892, I find reports of such courses, held mostly in 1891–92, in 15 different places, and note that of 344 stutterers and stammerers under instruction, 272 were reported cured, 58 improved, and 14 unimproved. The "Monatsschrift," for May, 1894, contains a report of eight school courses for stutterers in the schools of Spandau, near Berlin, held at intervals from July, 1890, to March, 1894. On the average, each class contained 8 pupils and lasted 4 months. Of 64 children, 52 overcame the stuttering habit, 8 were decidedly improved, 2 showed no marked improvement, and 2 withdrew from the class so early as to be left out of the account; 40 of the 64 were still in school, though not in the special class for stutterers, in March of the present year. Again, the report on the results of the instruction given to 261 stutterers in Dresden schools, during 1889–1893, yields the following result: cured, 49.6 per cent.; decidedly improved, 31.3 per cent.; slightly improved, 9.9 per cent.; without results, 0.76 per cent.

RELATIVE FREQUENCY OF STUTTERING IN EUROPE AND THE UNITED STATES.

The amount of stuttering varies in different countries to such an extent that nationality is held by some writers to exercise an influence in producing the disorder. Though it does not appear that the ratio of stutterers to the whole population has been determined accurately in any country, the number of recruits and conscripts exempted from military service, at various times, in France, Russia, and the United States, afford an inkling as to the prevalence of stuttering among young men in each of these countries. Summarily stated, the ratio of the number of men exempted on account of stuttering, to the number of conscripts subjected to particular examination touching their habits of utterance, was 6.33 per 1,000 in France, in the period 1850–1869; 1.36 per 1,000 among natives of the United States, during the War of Secession; and 1.20 per 1,000 in Russia, in the period 1876–1882. The above figures are derived, in the order given, from Chervin's "Statistique de Bégaiement en France, Paris, 1878," Baxter's "Statistics, Medical and Anthropological, of the Provost-Marshal-General's Bureau, Washington, 1875," and Ssikorski's "Ueber das Stottern, Berlin, 1891."

It is evident, however, from certain admissions of Chervin's, that had he given the ratio of men exempted for stuttering to all conscripts examined touching their fitness for military service, the result would be about 3.25 per 1,000, instead of 6.33. On this basis the figures for natives of the United States would be 1.227 per 1,000. Dr. Baxter's statistics show that of 3,243 Frenchmen offering as recruits in the United States army, during the late war, 3.08 per 1,000 were rejected on account of stuttering. Ssikorski does not furnish data for reducing his figures to the standard used in this paragraph.

It is clear, so far as we have data on which to form an opinion, that stuttering is more frequent among children of school age than among young men of military age. Thus Ssikorski's statistics of 22.878 Russian school-children show that 1.57 per cent. were stutterers. I am unable to cite any statement as to the prevalence of stuttering in French schools. In Germany this question has received a good deal of attention, as is evident from the following table:

TABLE SHOWING FREQUENCY OF STUTTERING AMONG SCHOOL-CHILDREN IN CERTAIN CITIES IN GERMANY.

Date of Report.	Place.	Number examined.	Number of Stutterers.	Per cent. of Stutterers.
1886	Berlin	155,000	1,550	1.00
1886	Breslau	37,000	355	0.93
1886	Dresden	27,000	442	1.63
1887	Elberfeld	18,000	220	1.22
1891	Wiesbaden	9,312	134	1.40
1890	Altendorf	6,000	141	2.35
		252,312	2,842	1.12

STUTTERING AMONG BOSTON SCHOOL-CHILDREN.

It would be hazardous even to attempt to guess at the proportion of stutterers to be found among American school-children, since American educationists, hitherto, have shown no disposition worth mentioning to meddle with the question of stuttering in any of its aspects. It is safe to say, however, that out of every thousand children in the public schools of Boston at least *seven* stutter or stammer. This statement is based on the results of two censuses of stutterers which I have had made during the last twelve months.

With the approval and consent of the Chairman of the Committee on Hygiene and Physical Training the

Principals of Schools have been asked twice during 1893–94 to report to me the names of all habitual stutterers in their schools, first on May 1, 1893, and again on January 31, 1894. In addition to the name, the age and class in school of each stutterer was asked for, together with a characterization of his malady as "slight" or "severe," as the case might be. The first census disclosed the presence of 500 stutterers, or 0.78 per cent. of all pupils in the day schools; the second census contained the names of 498, or 0.75 per cent. The total number of pupils belonging to the day schools on January 31, 1893, and on January 31, 1894, amounts to 129,060; the sum of the stutterers found in the two enumerations was 998, or 0.77 per cent. I found it inexpedient to attempt to discriminate in the returns by the teachers between stammerers and stutterers. Detailed results of the returns are found in the appended tables.

TABLE VII.

SHOWING THE NUMBER AND PERCENTAGE OF STUTTERERS, BY AGE AND SEX, IN THE BOSTON PUBLIC SCHOOLS, MAY 1, 1893.

Age.	Number of Pupils.		Stutterers.				Totals.		
	Boys.	Girls.	Boys.	Per cent.	Girls.	Per cent.	Pupils.	Stutterers.	Per cent.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Under 4.	125	126	. . . .	. . . .	. . . .	. . . .	251	. . . .	. . . .
4–5 . . .	581	603	4	0.68	2	0.33	1,184	6	0.50
5–6 . . .	1,987	1,708	11	0.55	1	0.05	3,695	12	0.32
6–7 . . .	2,857	2,575	33	1.15	11	0.42	5,432	44	0.81
7–8 . . .	3,141	2,830	35	1.11	17	0.60	5,971	52	0.87
8–9 . . .	3,222	2,862	45	1.39	15	0.52	6,084	60	0.98
9–10 . . .	3,164	2,865	36	1.13	8	0.27	6,029	44	0.72
10–11 . .	3,316	2,935	34	1.02	14	0.47	6,251	48	0.76
11–12 . .	3,061	2,771	27	0.88	11	0.39	5,832	38	0.65
12–13 . .	3,231	2,935	34	1.05	17	0.59	6,166	51	0.82
13–14 . .	3,057	2,604	42	1.37	11	0.42	5,661	53	0.93
14–15 . .	2,430	2,075	29	1.18	10	0.48	4,514	39	0.86
15–16 . .	1,545	1,567	19	1.22	6	0.38	3,112	25	0.80
16–17 . .	783	894	13	1.66	5	0.55	1,677	18	1.07
17–18 . .	396	529	3	0.75	. . . .	. . . .	925	3	0.32
18–19 . .	147	253	2	1.36	1	0.39	400	3	0.75
19+ . .	51	239	4	7.84	. . . .	. . . .	290	4	1.37
	33,103	30,371	371 or 1.12%		129 or 0.42%		63,474	500 or 0.78%	

The above table shows the distribution by sex and age of the habitual stutterers, reported by their teachers as belonging to the Boston public schools on May 1, 1893. In calculating the percentage of stutterers, I was obliged to make use of the figures given in columns 2, 3, and 8, which stand for the number of pupils, at each age, belonging to the schools on January 31, 1893, as corresponding data for May 1, 1893, could not be had conveniently. It would appear that the per cent. of stutterers in the Boston public schools, viz., 0.78, is less than that reported for the group of German public schools noted above, which is 1.12 per cent. The percentage figures printed in full-faced type should be particularly noted, since it would appear from Table VII. that the greatest incidence of stuttering is not relatively similar for boys and girls of a given age. That 1.12 per cent. of all boys and only 0.42 per cent. of all girls belonging to the schools should stutter is not surprising, since it has frequently been noted, by European observers, that from three to four times as many boys as girls stutter habitually. The table also shows, what has been noted frequently, that stuttering is particularly frequent at the period of second dentition, and at the onset of puberty, which are periods when the nervous system appears to be especially susceptible to disturbance.

TABLE VIII.

SHOWING THE NUMBER AND PERCENTAGE OF STUTTERERS, BY AGE AND SEX, IN THE BOSTON PUBLIC SCHOOLS, JANUARY 31, 1894.

Age.	Number of Pupils.		Stutterers.				Totals.		
	Boys.	Girls.	Boys.	Per cent.	Girls.	Per cent.	Pupils.	Stutterers.	Per cent.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Under 4.	137	180	. . . .	. . . .	. . . .	. . . .	317	. . . .	. . . .
4–5 . . .	636	589	2	0.31	1	0.16	1,225	3	0.24
5–6 . . .	2,202	1,896	19	0.86	6	0.31	4,098	25	0.61
6–7 . . .	3,150	2,671	34	1.07	3	0.11	5,821	37	0.63
7–8 . . .	3,178	2,955	26	0.81	11	0.37	6,133	37	0.60
8–9 . . .	3,280	2,969	39	1.18	14	0.47	6,249	53	0.84
9–10 . .	3,204	2,874	32	0.99	14	0.48	6,078	46	0.75
10–11 . .	3,199	2,911	41	1.28	8	0.37	6,110	9	0.80
11–12 . .	3,147	2,832	36	1.14	8	0.28	5,979	44	0.73
12–13 . .	3,227	2,863	41	1.27	15	0.52	6,090	56	0.91
13–14 . .	3,180	2,842	38	1.19	10	0.35	6,022	48	0.79
14–15 . .	2,543	2,161	29	1.14	16	0.74	4.704	45	0.93
15–16 . .	1,572	1,547	20	1.26	6	0.38	3,119	26	0.83
16–17 . .	884	1,004	15	1.69	3	0.29	1,888	18	0.95
17–18 . .	466	512	3	0.64	2	0.39	978	5	0.51
18–19 . .	215	297	1	0.46	1	0.34	512	2	0.39
19+ . .	70	293	3	4.28	1	0.34	363	4	1.10
	34,290	31,396	379 or 1.10%		119 or 0.37%		65,686	498 or 0.75%	

Table VIII. gives an analysis of the results of the enumeration of stutterers found in the schools on January 31, 1894. The per cents of stutterers range slightly lower than in Table VII. It is possible that there is more stuttering in the spring than in the winter.

TABLE IX.

SHOWING THE NUMBER AND PERCENTAGE, BY AGE AND SEX, OF STUTTERERS IN THE BOSTON PUBLIC SCHOOLS, ON MAY 1, 1893, AND JANUARY 31, 1894, TAKEN TOGETHER.

Age.	Number of Pupils.		Stutterers.				Totals.		
	Boys.	Girls.	Boys.	Per cent.	Girls.	Per cent.	Pupils.	Stutterers.	Per cent.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Under 4 .	262	306	. . . .	. . . .	. . . .	. . . .	568	. . . .	. . . .
4–5 . . .	1,217	1,192	6	0.49	3	0.25	2,409	9	0.37
5–6 . . .	4,189	3,604	30	0.71	7	0.11	7,793	37	0.47
6–7 . . .	6,007	5,246	67	1.11	14	0.26	11,253	81	0.71
7–8 . . .	6,319	5,785	61	0.95	28	**0.48**	12,104	89	0.73
8–9 . . .	6,502	5,831	84	**1.29**	29	**0.49**	12,333	113	**0.91**
9–10 . . .	6,368	5,739	68	1.06	22	0.38	12,107	90	0.74
10–11 . .	6,515	5,846	75	1.14	22	0.37	12,361	97	0.78
11–12 . .	6,208	5,603	63	1.01	19	0.33	11,811	82	0.69
12–13 . .	6,458	5,798	75	1.16	32	**0.55**	12,256	107	**0.87**
13–14 . .	6,237	5,446	80	**1.28**	21	0.38	11,683	101	0.86
14–15 . .	4,982	5,236	58	1.16	26	0.49	9,218	84	**0.91**
15–16 . .	3,117	3,114	39	1.24	12	0.38	6,231	51	0.81
16–17 . .	1,667	1,898	28	**1.61**	8	**0.42**	3,565	36	1.00
17–18 . .	862	1,041	6	0.69	2	0.19	1,903	8	0.42
18–19 . .	362	550	3	0.82	2	0.36	912	5	0.54
19	121	532	7	5.78	1	0.18	653	8	1.22
	67,393	61,767	750 or 1.11%		248 or 0.40%		129,160	998 or 0.77%	

In Table IX. the data of Tables VII. and VIII. are consolidated. Tables VII. and IX. agree in showing that girls of *seven*, *twelve*, and *sixteen* years of age are particularly subject to the disorder of stuttering, and that the corresponding ages for boys are *eight*, *thirteen*, and *sixteen*. If, as has already been suggested, the growth-rates of brain and body, and specific intensity of life, differ for boys and girls of the same age, it may prove true, on further investigation, that boys and girls of the same age differ from each other in their susceptibility, not only to stuttering, but to other forms of nervous disorder.

TABLE X.

SHOWING THE NUMBER AND PERCENTAGE OF STUTTERERS BY SEX, CLASS, AND GRADE IN THE BOSTON PUBLIC SCHOOLS, A, IN 1893, B, IN 1894, AND C IN 1893 AND 1894 TAKEN TOGETHER.

Year.			Kindergarten.		Primary Grade.				Grammar Grade.								High School Grade.		Total for all Grades.	
				Total.	Cl. III.	Cl. II.	Cl. I.	Total.	Ungraded Class.	Cl. VI.	Cl. V.	Cl. IV.	Cl. III.	Cl. II.	Cl. I.	Total.	All Classes.	Total.		
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	
A. 1893.	Pupils.	Boys . .	1,135	1,135	5,895	4,295	3,491	13,681	1,037	3,492	3,468	2,939	2,444	1,887	1,282	16,549	1,738	1,738	33,103	
		Girls . .	1,188	1,188	5,135	3,820	3,134	12,089	576	3,185	3,229	2,801	2,317	1,901	1,248	15,257	1,837	1,837	30,371	
	Stutterers.	Boys . .	11	11	66	55	40	161	8	43	34	31	24	18	16	174	25	25	371	1.12%
		Per cent.	0.96	0.96	1.12	1.28	1.14	1.17	0.77	1.23	0.98	1.05	0.98	0.95	1.24	1.05	1.43	1.43		
		Girls . .	2	2	29	18	11	58	0	10	20	13	14	7	2	66	3	3	129	0.42%
		Per cent.	0.17	0.17	0.56	0.47	0.34	0.47	0.00	0.31	0.61	0.45	0.60	0.36	0.16	0.43	0.16	0.16		
	Totals.	Pupils .	2,323	2,323	11,030	8,115	6,625	25,770	1,613	6,677	6,697	5,740	4,761	3,788	2,530	31,806	3,575	3,575	63,474	
		Stutterers	13	13	95	73	51	219	8	53	54	44	38	25	18	240	28	28	500	0.78%
		Per cent.	0.55	0.55	0.86	0.89	0.75	0.84	0.49	0.79	0.86	0.76	0.79	0.65	0.70	0.75	0.78	0.78		

B. 1894.	Pupils.	Boys . .	1,247	1,247	6,269	4,324	3,560	14,153	966	3,670	3,454	3,199	2,508	1,877	1,301	16 975	1,915	1,915	34,290		
		Girls . .	1,271	1,271	5,286	3,717	3,367	12,370	6.24	3,251	3,197	3,003	2,330	1,951	1,448	15,804	1,951	1,951	31,396		
	Stutterers.	Boys . .	6	6	63	49	42	154	14	45	41	26	32	25	17	200	19	19	379	1.10%	
		Per cent.	0.64	0.64	1.00	1.13	1.17	1.08	1.45	1.22	1.18	0.81	1.27	1.32	1.30	1.17	0.99	0.99			
		Girls . .	1	1	17	17	20	54	0	7	9	12	15	10	5	58	6	6	119	0.37%	
		Per cent.	0.08	0.08	0.32	0.45	0.59	0.43	0.00	0.21	0.28	0.39	0.64	0.51	0 34	0.36	0.30	0.30			
	Totals.	Pupils .	2,518	2,518	11,555	8,041	6,927	26,523	1,590	6,921	6,651	6,202	4,838	3,828	2,749	32,779	3,866	3,866	65,686		
		Stutterers	7	7	80	66	62	208	14	52	50	38	47	35	22	258	25	25	498	0 75%	
		Per cent.	0.27	0.27	0.79	0.82	0.89	0.76	0.88	0.74	0.75	0.61	0.97	0.91	0.80	0.78	0.64	0.64			
C. 1893 and 1894.	Pupils.	Boys . .	2,382	2,382	12,164	8,619	7,051	27,634	2,003	7,162	6,922	6,138	4,952	3,764	2,583	33,524	3,653	3,653	67,393		
		Girls . .	2,459	2,459	10,421	7,537	6,501	24,459	1,200	6,436	6,426	5,804	4,647	3,852	2,696	31,061	3,788	3,788	61,767		
	Stutterers.	Boys . .	17	17	129	104	82	315	22	88	75	57	56	43	33	374	44	44	750	1.11%	
		Per cent.	0.71	0.71	1.06	1.20	1.16	1.13	1.09	1.22	1.08	0.92	1.11	1.14	1.27	1.11	1.20	1.20			
		Girls . .	3	3	46	35	31	112	. . .	17	29	25	29	17	7	124	9	9	248	0.40%	
		Per cent.	0.11	0.11	0.44	0.47	0.47	0.46	. . .	0.26	0.45	0.43	0.62	0.44	0.26	0.39	0.30	0.30			
	Totals.	Pupils .	4,841	4,841	22,585	16,156	13,552	52,293	3,203	13,598	13,348	11,942	9,599	7,616	5,279	64,585	7,441	7,441	129,160		
		Stutterers	20	20	175	139	113	427	22	105	104	82	85	60	40	498	53	53	998	0.77%	
		Per cent.	0.41	0.41	0.77	0.86	0.83	0.81	0.68	0.77	0.77	0.68	0.88	0.78	0.75	0.77	0.71	0.71			

The foregoing table is constructed to show the percentage-distribution of all stutterers, and of the stutterers of each sex, in the several school grades. The high per cent. of stutterers in the primary schools, and the marked increase of stuttering among pupils of the primary schools, as compared with pupils in the kindergartens, is strikingly brought out in this table. *It seems to me to be a highly significant fact that the amount of stuttering, both in boys and girls, is greatly augmented at the very time when instruction in reading aloud is begun. In view of this fact the query naturally suggests itself: how far are kindergarten and primary school methods of language-training responsible for the prevalence of stuttering among our younger school-children?*

CONCERNING THE NUMBER OF SLIGHT AND SEVERE STUTTERERS.

The total number of stutterers enumerated by the teachers in the two censuses under consideration was 998. In the case of 639, or 64.02 per cent., the malady was characterized as "slight," while 359 cases, or 35.96 per cent., were characterized by the term "severe." In both categories not far from three times as many boys' as girls' names are found. Table XI., given below, shows that among 639 slight stutterers, 481, or 48.19 per cent., were boys, and 158, or 15.83 per cent., were girls; and that of 359 severe stutterers, 269, or 26.95 per cent., were boys, and 90, or 90.01 per cent., were girls. Inspection of Table XI., which is constructed to show the percentage-distribution, by age, of slight stutterers, severe stutterers, and of all stutterers, shows that slight stuttering is most frequent between 7 and 10 years of age (see columns 2, 3, and 4), and that severe stuttering is most frequent between the ages 11 and 14. This would indicate that the susceptibility to stuttering, which is intensified at the beginning of the second dentition and at the onset of puberty, is greater at the latter period.

SHOWING THE PERCENTAGE-DISTRIBUTION, BY AGE AND SEX, OF SLIGHT STUTTERERS, SEVERE STUTTERERS, AND OF ALL STUTTERERS, FOR 1893 AND 1894 TAKEN TOGETHER, IN THE BOSTON PUBLIC SCHOOLS.

	Slight Stutterers.			Severe Stutterers.			All stutterers.		
1. Age.	2. Boys.	3. Girls.	4. Boys and Girls.	5. Boys.	6. Girls.	7. Boys and Girls.	8. Boys.	9. Girls.	10. Boys and Girls.
4–5	1.04	1.89	1.25	0.37	.....	0.27	0.80	1.20	0.90
5–6	5.61	1.89	4.69	1.11	4.44	1.94	3.86	2.82	3.70
6–7	11.22	6.32	10.01	4.83	4.44	4.73	8.93	5.64	8.11
7–8	9.77	12.65	10.48	5.20	8.88	6.12	8.13	11.28	8.91
8–9	11.64	14.55	12.36	10.40	6.66	9.47	11.20	11.69	11.32
9–10	8.52	8.22	8.45	10.03	10.00	10.02	9.06	8.87	9.01
10–11	10.39	6.32	9.38	9.29	13.33	10.30	10.00	8.87	9.71
11–12	8.31	9.49	8.60	8.55	4.44	7.52	8.40	7.66	8.21
12–13	8.73	13.29	9.85	12.26	12.22	12.25	10.00	12.90	10.72
13–14	8.93	7.59	8.60	13.75	10.00	12.81	10.66	8.46	10.12
14–15	8.31	9.49	8.60	6.69	12.22	8.07	7.72	10.46	8.41
15–16	3.74	3.79	3.75	7.80	6.66	7.52	5.20	4.83	5.11
16–17	2.70	1.89	2.50	5.57	5.55	5.87	3.73	3.22	3.50
17–18	0.20	0.63	0.31	1.85	1.11	1.67	0.80	0.80	0.80
18–19	0.20	1.26	0.46	0.74	.....	0.55	0.40	0.80	5.01
19	0.62	0.63	0.62	1.48	.....	1.11	0.90	0.40	0.80
Total	481	158	639	269	90	359	750	248	998
Per cent. of all stutterers	48.19	15.83	64.02	26.95	9.01	35.96	75.16	24.84	100.00

CORRELATION OF RATES OF STUTTERING WITH GROWTH-RATES AND SPECIFIC INTENSITY OF LIFE.

In commenting on Table VI., I called attention to the fact that Boston girls grow most rapidly during the year in which their specific intensity of life is greatest, viz., the *twelfth*, and that Boston boys grow most rapidly in their fourteenth and fifteenth years, though the *thirteenth* is the year in which their specific intensity of life is greatest. It was also noted that specific intensity of life and the rates of growth in height and weight decline sharply in both sexes after the *sixteenth* year. Since analysis of Tables VII., and IX., shows that girls of *seven*, *twelve*, and *sixteen*, and boys of *eight*, *thirteen*, and *sixteen*, are particularly given to stuttering, the question naturally arises, whether the susceptibility of the nervous system to the motor disorder of stuttering, which seems to differ in boys and girls, may not be correlated with their respective rates of growth and immunity from death. Analysis of the following table seems to point in the direction of such a correlation:

Age.	Girls. Life-rates. Specific Intensity of Life.	Girls. Height-rates. Average Yearly Increase in Centimeters.	Girls. Height-rates. Average Yearly Increase Per cent. in Centimeters.	Girls. Weight-rates. Average Yearly Increase in Kilograms.	Girls. Weight-rates. Average Yearly Increase Per cent. in Kilograms.	Girls. Stuttering-rates. Per cent. of Stutterers at Each Age.	Girls. Stuttering-rates. Percentage Distribution of Slight Stutterers by Age.	Girls. Stuttering-rates. Percentage Distribution of Severe Stutterers by Age.	Boys. Life-rates. Specific Intensity of Life.	Boys. Height-rates. Average Yearly Increase in Centimeters.	Boys. Height-rates. Average Yearly Increase per cent. in Centimeters.	Boys. Weight-rates. Average Yearly Increase in Kilograms.	Boys. Weight-rates. Average Yearly Increase per cent. in Kilograms.	Boys. Stuttering-rates. Per cent. of Stutterers at Each Age.	Boys. Stuttering-rates. Percentage Distribution of Slight Stutterers by Age.	Boys. Stuttering-rates. Percentage Distribution of Severe Stutterers by Age.	Age.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
5–6 . .	60.08	5.2	4.00	1.6	8.88	0.11	1.89	4.44	67.3	5.5	5.20	1.9	10.25	0.71	5.61	1.11	5–6
6–7 . .	69.5	5.5	4.08	1.9	9.69	0.26	6.32	4.44	74.5	5.1	4.58	1.8	8.78	1.11	11.22	4.83	6–7
7–8 . .	103.8	5.3	4.58	1.9	8.83	0.48	12.65	8.88	106.8	5.1	4.38	2.2	9.86	0.95	9.77	5.20	7–8
8–9 . .	123.2	4.5	3.72	2.5	10.68	0.49	14.55	6.66	164.0	4.9	4.03	2.4	9.79	1.29	11.64	10.40	8–9
9–10 . .	[1]195.4	[1]5.0	[1]3.98	2.4	9.26	0.38	8.22	10.00	134.8	5.1	4.04	2.8	10.40	1.06	8.52	10.03	9–10
10–11 .	[2]191.2	[2]5.3	[2]4.06	[1]2.9	[1]10.24	0.37	6.32	13.33	[1]209.3	4.1	3.12	2.2	7.43	1.14	10.39	9.29	10–11
11–12 .	[3]309.0	[3]6.2	[3]4.56	[2]4.3	[2]13.78	0.33	9.49	4.44	[2]233.2	[1]4.6	[1]3.39	[1]3.1	[1]9.74	1.01	8.31	8.55	11–12
12–13 .	[4]232.0	[4]5.8	[4]4.08	[3]4.7	[3]13.23	0.55	13.29	12.22	[2]290.1	[2]5.3	[2]3.78	[2]3.6	[2]10 31	1.16	8.73	12.26	12–13
13–14 .	162.0	[5]4.6	3.11	[4]4.4	[4]10.94	0.38	7.59	10.00	[3]238.7	[3]6.8	[3]4.68	[3]4.5	[3]11.66	1.28	8.93	13.75	13–14
14–15 .	171.3	2.9	1.90	[5]3.5	3.14	0.49	9.49	12.22	[3]250.1	[4]6.1	[4]4.01	[4]5.6	[4]13.02	1.16	8.31	6.69	14–15
15–16 .	169.3	1.2	0.77	[6]2.7	5.61	0.38	3.79	6.66	188.1	[5]6.9	[5]4.36	[5]6.3	[5]12.96	1.24	3.74	7.80	15–16
16–17 .	152.0	0.8	0.51	1.6	7.83	0.42	1.89	5.55	151.9	2.9	1.75	[6]2.9	5.23	1.61	2.70	5.57	16–17
17–18 .	125.6	0.1	. . . .	. . . .	. . . .	0.19	0.63	1.11	155.3	1.3	0.77	2.3	3.97	0.69	0.20	1.85	17–18

The figures given above as regards the specific intensity of life are for all Boston children in the census-years 1875, 1885, and 1890 taken together; growth-rates for public-school children in 1875, and stuttering-rates for public-school children in 1893 and 1894 taken together.

The above table is significant and suggestive; but it cannot be considered absolutely conclusive, since it does not take into account the earlier years of the first period of immaturity and the years 18-25. Moreover, mortality, growth, and stuttering-rates, to be strictly comparable, should be computed for the same year, or series of years, which is impossible under existing conditions.

As stuttering is a functional disorder rather than a constitutional disease, it can hardly be considered a factor in augmenting the death-rate of children or adults, though Canon Kingsley was of the opinion that stutterers, as a class, were short-lived. It has been shown that among Swedish and Danish school-children (see reports and articles by Prof. Axel Key, of Stockholm, and Dr. Axel Hertel, of Copenhagen) the percentage amount of illness, which is high at the beginning of puberty, is lowered during the period of accelerated growth, and that it increases markedly after the close of that period. Somewhat similarly the amount of stuttering among Boston school-children is augmented at the beginning of accelerated growth, just before or just after such growth culminates, and again after its cessation.

Inspection of the figures printed in full-faced type in columns 7 and 15 shows that girls stutter most at the ages of 7, 8, 12, 14, and 16; and that boys stutter most at 8, 13, 15, and 16. It is readily conceivable that the nervous system should be peculiarly irritable during the period 7–9, when the "immense growth" of the brain which signalizes the first period of immaturity is closing or has just closed; and again during the years 12–14, when the growth of the musculature has culminated or is just culminating; and again in the years 15–17, when the growth-rates are at a relatively low level and death-rates are rising.

The rates of specific intensity of life given in Table XII., are based on data for three years; the per cents. of stutter-

ing are based on data for two years; while the growth-rates are based on data for one year and have reference to a much smaller number of persons than those taken into account in computing either the specific intensity of life or the per cent. of stutterers. We might expect, therefore, that the rates which show the frequency of stuttering should correspond more closely with the rates of specific intensity of life than with the rates of growth — and so they do. The high per cent. of stutterers among girls of 7 and boys of 8 years corresponds pretty closely to a marked increase of specific intensity of life (see columns 7 and 2, and 15 and 10). The correspondence is even more striking in the case of girls of 12 and boys of 13: in each case there is a marked increase of stuttering in the year immediately following that in which specific intensity of life reaches its maximum; or, in other words, stuttering increases markedly in the year in which the body's tide of exuberant vitality begins to ebb. Again, between 16 and 17, when specific intensity of life undergoes a marked decline, and is practically the same for both sexes (being 152.0 for girls and 151.9 for boys), the per cent. of stutterers is relatively high.

The most probable interpretation of the facts set forth in the above tables seems to me to be this: that the irritability of the nervous system, of which stuttering is an expression, is correlated with the most marked upward and downward fluctuations of the power of the organism to resist death-compelling influences, which power of resistance to lethal influences is an expression of the nutritive activity of the organism during its period of greatest and most rapid growth.

If we take into account the differences shown in these pages and elsewhere to exist between boys and girls in respect to their growth and death-rates and their susceptibility to disease, it must be admitted that, during most of the years devoted to elementary and secondary education,

girls are one or two years ahead of boys of the same age both in bodily and mental development. If this be admitted, it is manifestly unnatural, impolitic, and unsafe to bind identical or equal burdens on the shoulders of boys and girls of the same age and expect them to keep pace with each other stride for stride.

SIGNIFICANCE OF THE FACTS RELATING TO STUTTERING.

I have brought forward the question of stuttering in this report for two reasons: (1) in order to illustrate the fact that the fundamental principles of all forms of neuro-muscular training are the same in kind, and (2) because the application of those principles in the most approved and successful methods of teaching reading, and of preventing and curing speech-disorders of a motor character, affords a simple and practical illustration of the educative effects of systematized muscular exercise. I am firmly persuaded that the presence of 500 stammerers and stutterers in our public schools is an unnecessary evil, because it might be prevented and may be abated by simple, well-approved, practicable measures. I shall urge the teachers, especially those in the primary schools, to pay particular attention to the "breathing-movements" which occupy a prominent place in the Swedish gymnastics taught in our schools, as by so doing they may contribute towards the prevention of in-coördination in the mechanisms concerned in speech production. But I do not suppose that any radical abatement of the number of stutterers can be looked for unless recourse be had to forms of drill which are so special and technical that they do not and ought not to constitute a part of the curriculum of any school devoted to the training of teachers of gymnastics. Vocal training is based on the principles of physical training; but gymnastics and athletics, which constitute the department of physical training properly so called, are not based on vocal training and have

never been particularly well-taught or "professed" by elocutionists, singers, actors, or "stutter doctors."

To experts the educative effects of motor exercise and drill are quite as obvious in manual training, drawing, and writing as in the case of vocal training, and the mischievous results of failure to apprehend and apply the principles of physical training in each of those branches of instruction are capable of conclusive demonstration; but the distinctively school-bred disorder of stuttering was chosen for consideration in this report, since it seemed to me to be better adapted than pen-paralysis, short-sight, or spinal curvature to my purpose of impressing upon teachers the importance of following the order of nature.

CONCERNING PHYSICAL TRAINING IN THE HIGH SCHOOLS.

Although the Primary School Committee of Boston in 1833 made it incumbent on all instructors within its jurisdiction "*to attend to the physical comfort and education of the pupils under their care;*" and although the General School Committee passed a rule in 1853, requiring the masters, ushers, and teachers in the grammar and writing schools to "*so arrange the daily course of exercises in their respective classes that every scholar shall have daily, in the forenoon and afternoon, some kind of physical or gymnastic exercises,*" it was not till 1860 that any action was taken, even by way of recommendation, that can be construed as applying to the pupils of the high schools of the city in respect to physical training. On December 10, 1860, the Special Committee on the Subject of Physical Training, which had been appointed to consider Superintendent Philbrick's recommendation, that a thorough system of physical training be introduced "*into all grades*" of the public schools, reported in favor of such action. The committee further recommended: (1) the appointment of a Standing Committee on Physical Training, with authority to appoint "a suitably qualified person to

aid and instruct the teachers in the training of their pupils in physical exercises;" (2) that the system of exercises, *i.e.*, modified Ling Free Gymnastics, *be practised in all the schools* not less than 15 nor more than 30 minutes each half day. None of the recommendations of the committee was adopted for some years.

MILITARY DRILL.

Early in 1864 military drill was introduced in a tentative way, under Capt. Hobart Moore, into the Latin and English High Schools, and a few grammar schools for boys, in accordance with recommendations of a Special Committee on Military Gymnastics and Drill. The Board voted, on December 27, 1864, to form a Standing Committee on Gymnastics and Military Drill "*to enforce the regulations on this subject and to superintend this branch of instruction*," with authority to employ an instructor in vocal and physical gymnastics, and an instructor in military drill. Early in 1865 the first Standing Committee on Gymnastics and Military Drill was appointed, and Mr. Lewis B. Monroe was elected to devote two hours in each school-day to the instruction "in vocal and physical gymnastics" of pupils in the Girls' High and Normal School, the Training School, and the first class of the Bowditch School; and Capt. Hobart Moore to give instruction in military drill in the Latin and English High Schools (and for a time in the upper classes of the Eliot and Dwight Grammar Schools). In 1866 Mr. Monroe's jurisdiction was enlarged and his salary doubled. He continued to act as Director of Vocal and Physical Culture till 1870, when his title was changed to Superintendent of Vocal and Physical Culture, he being required to instruct and supervise the teachers for three months only in the year. At the end of the school year of 1871 his connection with the schools ceased. He was succeeded, in 1872, by Mr. W. J. Parkerson, for three months; and by Mr. Moses True Brown,

for three months in 1873, six months in 1874, and six months in 1875. In 1875 the office of Superintendent of Vocal and Physical Culture was abolished, and Mr. Brown was made Teacher of Vocal Culture, his instruction being confined to pupils in the High and Normal Schools.

The late General Moore served as Instructor in Military Drill continuously from 1864 till his death in April, 1894. Since 1865 instruction in military drill has been confined to high-school pupils. At present the sixth class of the Latin School has gymnastics instead of military drill. During the past year, at the request of the head-master of the Latin School, I have supervised the gymnastic instruction of the sixth class in that school.

CHANGES IN NAME OF THE COMMITTEE IN CHARGE.

The standing committee in charge of the various branches of physical training was known as the Committee on Gymnastics and Military Drill, from 1864 till 1868; and from 1868 till 1875 inclusive as the Committee on Vocal and Physical Culture and Military Drill, excepting the year 1870, when for one year the supervision of drawing was added to its duties. When the School Board was reorganized in 1876, the committee in question was dropped, and military drill was placed in charge of a Standing Committee on Military Drill. The existence of this committee was terminated by a vote of the School Board, on April 23, 1878, when the control and supervision of military drill were assigned to the Committee on High Schools, in whose hands it has since remained.

Excepting the periodical nomination of special teachers of calisthenics and vocal culture in the Girls' High and the Girls' Latin Schools, there appears to have been no supervision, actual or nominal, of either "vocal or physical culture," on the part of any special or standing committee from the reorganization of the Board in 1876 till March 12,

1889, when the matter of physical exercises was referred by the Board to the Committee on Hygiene, with full powers. In January, 1890, a Standing Committee on Physical Training was instituted by the Board, and the general supervision of physical training *in all the schools* being expressly intrusted to it. In January, 1893, the Committee on Hygiene and the Committee on Physical Training were consolidated into the present Committee on Hygiene and Physical Training, whose duties are set forth in Sect. 53 of the Rules and Regulations, 1893, as follows: "*The Committee on Hygiene and Physical Training shall have the general supervision of the instruction in hygiene and physical training in all the schools. They shall make a written report to the Board in September. The Director of Physical Training and his assistant shall perform the duties of their office under the direction of this committee.*"

CITATIONS FROM RULES AND REGULATIONS.

Judging from its Rules and Regulations the School Board of twenty-five years ago was committed to the policy of providing regular instruction in some branch of physical training for the pupils of all the high schools, as well as for all the pupils in the primary and grammar schools. The following citations from the Rules and Regulations, adopted by the School Committee in 1868, support this view:

See Chap. IV., Sect. 9, setting forth the jurisdiction and duties of the Committee on Vocal and Physical Culture; Chap. V., Sect. 2, providing for the salaries of the instructor of Vocal and Physical Culture and his assistant; Chap. IX., Sect. 21, requiring the arrangement of the programme in all schools "*so that every scholar*" should have "*each forenoon and afternoon some kind of physical exercise;*" Chap. X., Sect. 6, with regard to the "physical culture" of primary pupils; Chap. XI., Sect. 11, requiring each grammar-school teacher to devote at least twenty minutes

each day to vocal and physical exercises; Chap. XII., Sect. 10, relative to instruction in military drill, for two hours each week, in the Latin School; Chap. XIII., Sect. 12, which provides for similar instruction in military drill for a like time for the boys of the English High School; and the course of study laid down in Chap. XIV. for the pupils of the Girls' High and Normal Schools, — exercises in vocal gymnastics and physical exercises being required in each class.

A study of the reports of the Committee on Vocal and Physical Culture and Military Drill and of those of Superintendent Philbrick leads inevitably to the conclusion that the instruction given by Mr. Monroe, his assistants and successors, was mainly of an elocutionary nature, supplemented at times by a few rudimentary gymnastics tending to promote voice production; and that genuine physical exercises became a nominal and perfunctory matter in many or most of the lower schools, and in the high schools for girls. On the other hand, it would appear that the requirements in regard to instruction in military drill of the boys, in the various high schools, have been faithfully carried out for twenty-five years, and that to-day the full amount of time accorded to military drill in the Course of Study is given to that subject. Aside from the so-called "Setting-up Exercises" practised during drill hours, and excepting a few spasmodic and short-lived experiments in gymnastics, instruction in gymnastics has not been provided for the boys in our high schools.

In the autumn of 1892, at the request of General Moore, and by permission of the Chairman of the Committee on High Schools, an improved and enlarged series of "Setting-up Exercises," based on Ling gymnastics, was prepared by the Director of Physical Training and his Assistant for use in the School Regiment, and the new exercises have been in use in the high schools for boys for the past year and a half.

The late General Moore expressed himself as being greatly pleased with the working of the new "Setting-up Exercises." The boys entering the high schools undoubtedly have a better carriage than of old, owing to the gymnastics taught them in the grammar schools. The requirements of the present course of study in regard to school exercises (including military drill), and the arrangement of study hours for each class, are faithfully complied with in the daily and weekly programmes of the English High and the Public Latin Schools.

The Rules and Regulations of 1868, cited above, remained without essential change till 1876, and reflect the nearest approach made to organizing a general system of physical training in all grades of schools, under the Standing Committee on Vocal and Physical Culture and Military Drill. At this day it must be said that that organization was largely illusory and inadequate. Even during the last years of the Committee, and during the incumbency of Mr. Moses True Brown as teacher of vocal culture in the high schools, it was deemed necessary to provide the Girls' High School with a special teacher of gymnastics. In 1874, and in 1875, the Committee on the Girls' High School asked leave, which was granted under suspension of the rules, to employ a special temporary teacher of physical culture in that school. In 1876 the School Board, in authorizing the corps of special teachers for high-school service (Roxbury, Charlestown, W. Roxbury, Dorchester, and Brighton having been annexed since 1868) explicitly provided for a "*Special Teacher of Physical Culture*" in the Girls' High School, which privilege has been accorded to that school practically ever since. Since 1881 the Girls' Latin School has been provided with a similar special teacher. The remainder of the high schools, as a rule, have not been allowed such a special teacher. The following table is introduced to show the changes made in the designation of the committee in charge of physical training during the period 1863–93:

TABLE XIII.

SHOWING CHANGES OF DESIGNATION OF THE COMMITTEE IN CHARGE OF PHYSICAL TRAINING IN THE PUBLIC SCHOOLS OF BOSTON, 1863–1893.

Year.	Title of Committee in Charge.	Date of Vote constituting the Committee.
1863. (1)	Committee on Military Gymnastics and Drill	December 22, 1863.
1864. . .	" " "	
1865. (2)	Standing Committee on Gymnastics and Military Drill	December 27, 1864.
1866. . .	Standing Committee on Gymnastics and Military Drill.	
1867. . .	Standing Committee on Gymnastics and Military Drill.	
1868. (3)	Standing Committee on Vocal and Physical Culture	February 9, 1869.
1869. . .	Standing Committee on Vocal and Physical Culture and Military Drill and Drawing.	
1870. (4)	Standing Committee on Vocal and Physical Culture and Military Drill.	
1871. . .	Standing Committee on Vocal and Physical Culture and Military Drill.	
1872. . .	Standing Committee on Vocal and Physical Culture and Military Drill.	
1873. . .	Standing Committee on Vocal and Physical Culture and Military Drill.	
1874. . .	Standing Committee on Vocal and Physical Culture and Military Drill.	
1875. . .	Standing Committee on Vocal and Physical Culture and Military Drill.	
1876. (5)	Committee on Military Drill.	
1877. . .	" "	
1878. (6)	Committee on High Schools	April 23, 1878.
1879. . .	" "	
1880. . .	" "	
1881. . .	" "	
1882. . .	" "	
1883. . .	" "	
1884. . .	" "	
1885. . .	" "	
1886. . .	" "	
1887. . .	" "	
1888. . .	" "	
1889. (7)	Committee on Hygiene, originally appointed June 9, 1885	Put in charge of Physical Training March 12, 1889.
1890. (8)	Committee on Physical Training	January 16, 1890.
1891. . .	" "	
1892. . .	" "	
1893. (9)	Committee on Hygiene and Physical Training	January 12, 1893.

SPECIAL TEACHERS APPOINTED IN CERTAIN SCHOOLS.

Since 1885 "vocal culture" has usually constituted a part of the work of the special teachers of calisthenics in the Girls' High and Latin Schools, and the present incumbents, viz., Miss Miller and Miss Hussey, are designated Teachers of Vocal and Physical Culture. Beyond nominating these special teachers in the Girls' High and Latin Schools, and a special teacher of gymnastics for the two years ending in June, 1893, in the Brighton High School, the Committee on High Schools does not seem to have evinced special interest in physical training (even since 1876), except in so far as it has declined to allow the appointment of special teachers in this branch in other high schools for girls. During the year 1893–94 the girls of the Roxbury High School, about three hundred in number, have had no instruction in gymnastics, owing to the unwillingness of the Committee on High Schools to provide a special teacher.

COURSE OF STUDY NOT COMPLIED WITH.

It is well-nigh impossible to frame any comprehensive statement that shall be accurate with regard to the high schools for girls as a class, touching the matter of physical training. In the course of study adopted by the Board in 1877, and in the present course of study, adopted in 1890, "gymnastics" was made a required subject for girls in the high-school classes. With the exception of the Girls' Latin School (in which under the present course of study only one hour a week is to be given to gymnastics), two hours of gymnastics per week for each girl in the high schools have been required, by the course of study, since 1877. It is extremely doubtful if the requirements of the course of study have been complied with in this respect in any of the high schools for girls till within a year. It is absolutely certain that for the last few years, the average time given to gymnastics in the high schools for girls has not exceeded

one hour per week for each pupil. In other words, the weekly programmes of the high schools for girls have not usually been constructed so as to secure to each pupil the required amount of instruction in physical training, — even in those schools that are provided with special teachers of the subject. During the school year 1893–94 there has been a marked improvement in several of the high schools in this respect.

SOME REASONS FOR DIVERSITY OF PROGRAMMES.

One reason for this state of things seems to be that physical training in the high schools for girls has been left to take care of itself, and has not been respected as a coördinate required exercise. In certain schools the boys have the preference in the use of the hall for drill-purposes, so that the girls' gymnastics suffer deprivation and neglect. Again, until a year ago, there has been much less interest in the new gymnastics — among the teachers — in the high schools than in the grammar and primary schools.

Another and very weighty reason is to be found in the difficulty of drawing up a programme free from conflict between the different sections of classes, so as to maintain the proper relation of recitation and study-hours. The time allowed to recess and to study-hours is not the same in all the schools; that is to say, rigid conformity to the course of study is not adhered to, and in some instances the programme is crowded and distorted by subjects not provided for in the course of study, so that the gymnastic instruction is abridged. These and other difficulties that might be instanced render it impracticable to draw up a uniform programme in gymnastics for the high schools containing girls. If physical training is to be made genuine and effective, in this class of schools, it is important that the requirements of the course of study with regard to the amount of time assigned to gymnastic exercise shall be complied with.

It may also be mentioned that there is no teacher in any of the high schools for girls who devotes her whole time to gymnastic instruction. The number of boys and the number of girls in the high schools, taken as a whole, is practically the same, but the cost of military drill for the boys is nearly twice as great as the cost of the gymnastic instruction given the girls.

ANOMALOUS RELATION OF DIRECTOR TO WORK IN HIGH SCHOOLS.

As Director of Physical Training I am directly responsible to the Committee on Hygiene and Physical Training; but inasmuch as the jurisdiction of that committee over physical training in the high schools appears not to be altogether clearly defined, my relation to physical training in those schools is somewhat anomalous, not to say embarrassing. I make it a rule, however, to inspect the classes from time to time, and to comply so far as possible with all requests from the head-masters for aid or advice with regard to instruction in gymnastics, though I do not consider myself responsible for the work done in the high schools to the same extent as for that done in the lower schools over which the Committee on Hygiene and Physical Training exercise undisputed jurisdiction.

VALUE OF ADVANCED COURSE IN HIGH SCHOOLS.

It gives me pleasure to state that the character of the gymnastic instruction given in the high schools has made marked progress during the past year, especially in the Charlestown High School and the West Roxbury High School. The gymnastic course in the Charlestown High School is of a higher grade than in any other of the schools, by reason of the fact that it has been provided with a fairly complete set of Swedish apparatus, which was imported from Christiania in Norway. The cost of securing the same and of putting

it in place, in a room specially devoted to gymnastics, was about $600. A few pieces of Swedish apparatus have been put to good use in the Brighton High School during the past three years.

It seems to me to be extremely desirable, and in most cases practicable, that the instruction given in gymnastics in the high schools should be thorough and varied; that it should be adapted to the peculiarities and adequate to the needs of adolescents; and that it should constitute a distinct advance beyond the grammar-school course in gymnastics, which has hitherto been confined to free standing movements. It is impossible to secure these ends without proper apparatus and competent teachers.

SUGGESTIONS.

The following suggestions are respectfully submitted, as tending to improve the present condition of physical training in the high schools: (1) That the Committee on Hygiene and Physical Training and the Committee on High Schools take measures to arrive at an understanding with regard to the nomination and supervision of teachers of physical training in the high schools; (2) that the Committee on Hygiene and Physical Training and the Committee on High Schools take concerted action towards preparing a programme for each high school, in accordance with the course of study, so far as the requirements of the same in regard to physical training are concerned; (3) that the Roxbury High School be provided with a special teacher in Ling gymnastics, until a regular teacher, competent to teach the same, can be secured.

THE SEATING OF PUPILS.

On October 25, 1892, the School Committee, as is shown by its minutes, took action as follows:

Mr. Green, for the Special Committee on the Seating of Pupils, offered the following:

Whereas a carefully prepared report to the School Committee, by a competent expert, on the seating of pupils in the public schools (School Document No. 9, 1892), has been printed and distributed to all teachers in charge of rooms, it is hereby

Ordered, That the Supervisors and the Director of Physical Training be and hereby are directed to ascertain, in their visits to their respective schools, whether or not the said report has been received and studied by the teachers, and whether intelligent effort is made on the part of the teachers to seat their pupils in accordance with the teachings of the report, as far as the present provision of school furniture will allow.

Ordered, That the Supervisors and the Director of Physical Training be directed to render to teachers any needed advice and assistance in the seating of pupils, and to include in their next reports to this Board the general results of their observations, and any suggestions pertaining to the proper seating of pupils which they may think desirable to bring to the notice of the School Committee.

Accepted, and the orders passed.

In obedience to the orders cited above, I have made a somewhat special study of the conditions which obtain in our schools in regard to the seating of pupils. I have informed myself of the peculiarities of certain forms of adjustable desks and chairs recently put upon the market; and have rendered such assistance and advice to teachers in the seating of pupils as lay in my power.

GENERAL CONCLUSIONS.

Before entering upon the discussion of certain particular topics suggested in the above orders, the general conclusions which I have reached in this matter may be stated as follows:

1. Little if any improvement has been made in the methods of seating pupils in the Boston schools since Superintendent Philbrick's efforts, some twenty-five years ago, to secure desks and chairs of improved construction.

2. The method of seating which now prevails is so arbitrary, antiquated, and inadequate that it needs amendment.

3. The desks and chairs which are customarily furnished, although they are durable and well made when considered simply as articles of manufacture, do not conform as regards their design and construction to the recognized principles of modern school-hygiene.

4. The present condition of things appears to be due to the fact that the designing, selection, and distribution of the school-furniture now in use have been left too largely in the hands of interested and inexpert persons, who were practically outside the jurisdiction of the School Committee. Our methods of seating, therefore, have not kept pace with the progress made in those parts of the world in which expert knowledge has been turned to practical account in the attempt to solve the problems involved.

5. Certain manufacturers of school-furniture have recently shown an active disposition to improve the quality of their wares, especially in the direction of devising adjustable desks and chairs. This is a hopeful sign of the times. Still, the present state of their art is so rude and undeveloped, and is so likely to undergo further change and improvement, within the next few years, that the wisdom and expediency of adopting any of the newer and so-called improved American systems of seating, except in a tentative and experimental way, may be doubted seriously.

6. The problem of providing our school-population with desks and seats which shall adequately meet the requirements of growing children is one of vital importance. It is also an intricate and difficult problem, since it involves questions of a medical nature, in addition to questions which pertain to mechanical engineering and to the practical management of schools. The best interests of pupils, teachers, school-managers, and of manufacturers as well, all demand the adoption of more comprehensive and active measures

than have been taken as yet in this country. To enlighten the public mind with regard to the essential principles involved in the construction and use of school-furniture, it is eminently desirable, to say the least, that the whole problem of seating should be authoritatively pronounced upon by a commission of disinterested men, who are competent and willing to avail themselves of the best that has been attempted or accomplished by similar commissions in Europe during the past ten years. The conclusions and recommendations of such a commission, if it were appointed and supported by a representative organization such as the Massachusetts State Board of Health, the Massachusetts Medical Society, or the State Board of Education, or by the conjoint action of all three, could hardly fail to prove widely influential in promoting the public welfare. By hastening the settlement of vexed questions, and by obviating the necessity of costly and partial experiments, with all manner of "improved chairs and desks" on the part of the school boards of the Commonwealth, such a commission would save the cost of its investigations and publications many times over to the taxpayers of the State.

DR. SCUDDER'S REPORT.

School Document No. 9, 1892, was prepared by Dr. C. L. Scudder, of this city, and embodied the results of his "careful inquiry into the seating in detail of over 3,500 of the school-girls of the Grammar and High Schools." The scope and nature of Dr. Scudder's inquiry is indicated by the title of his report, given below:

An Investigation into one of the Etiological Factors in the Production of Lateral Curvature of the Spine — Reasons why the Seating of School-Children should receive very Careful Supervision.

Dr. Scudder characterizes the method of supplying school-furniture as follows:

The method of providing seats and desks for the various school-houses of Boston is somewhat as follows:

A school-house is built and ready for seats. The Commissioner of Public Buildings, or his assistant, having ascertained the grade of the school and the number of pupils to be accommodated in each room, sends an order to the manufacturer of school furniture who is fortunate enough to hold the contract for the current year, to seat and desk the building. The manufacturer, knowing approximately the ages of the children who will attend a school of the given grade, provides desks and seats as he sees fit, furnishing one, two, or three sizes to a single room, as he is inclined, or as may have been suggested by the head-master of the school.

How does the manufacturer determine the sizes that shall be sent to meet the requirements of certain ages? After corresponding and talking with those who have supplied for many years large cities and Boston with school furniture, I find it impossible to learn how the standard of the height of desk and chair has been determined. The standard for the gradation of the modern school-desks has evidently been handed down from one generation to the next, until it can no longer be traced to its originator.

Out of 37 rooms examined, only 13 were found to be provided with as many as two sizes of desks and chairs. "In every instance," says Dr. Scudder, "where these two sizes are found there are only a few of the second, and the difference in sizes is often scarcely noticeable. With very few exceptions it is true that girls of the grammar schools in any one room sit in the same-sized seats, and at desks of uniform height."

The report contains tabulated statements showing the range of age and the range of height exhibited by the pupils of 6 girls' schools; the data concerning 34 rooms are complete. We may divide these rooms into two classes, viz.: (1) those with desks of *one size* only, and (2) those with *two sizes* of desks. Of the former there were 21, of the latter 13 rooms. In 21 rooms, in which the desks were of one size only, the average difference between the height of the tallest and shortest girls amounted to 31.3 centimeters,

or 12.26 inches; and the average difference between the ages of the oldest and youngest girls was 5 years and 4 months. In 13 rooms, which contained desks of two sizes, the average difference in height between the tallest and shortest girls was 41.14 centimeters, or 16.26 inches; and the average difference in age between the oldest and youngest pupils was 6 years and 2 months.

The report contains twelve plates which serve "to illustrate a few of the faulty positions taken because of the disproportion between child, seat, and desk."

Dr. Scudder states his conclusions as follows:

1. The present method of seating the school-houses of Boston is at fault, in that children are compelled to sit in desks unsuited to them.

2. This method of seating tends to the production of permanent deformity of the spine.

3. The poor seating in our schools has not been hitherto sufficiently emphasized by orthopædic surgeons as a cause of spinal deformities.

4. A larger number of different-sized desks and seats, or adjustable desks and seats, should be provided for each school-room.

5. The teachers of the public schools should be impressed with the fact of the importance of maintaining erect positions, both in sitting and standing.

6. Having greater variety in sizes of seats and desks, and recognizing the danger of malpositions in sitting, great care should be used to seat each child before a desk and in a chair as nearly as possible her proper size.

7. The desk should be low enough to just allow the bent elbow to touch it when the hand is raised to write without raising the shoulder or tilting the trunk.

8. The chair should permit easy contact of the whole sole of the shoe with the floor when the child sits well back in the seat.

9. The foot-rests should be used more than at present, not only to support the foot and leg, but to give a feeling of support to the whole trunk, and to prevent the slipping forward of the buttocks upon the chair, causing one of the commonest of bad postures.

10. The present system of gymnastics in use in the public schools will help to overcome slight tendencies to deformity which might go unchecked and lead to disastrous results.

In spite of the fact that Dr. Scudder's valuable report was "distributed to all teachers in charge of rooms," my investigation of the seating of pupils in more than one hundred sample rooms, taken at random, leads me to conclude that no considerable effort has been made by the teachers to seat their pupils in accordance with the teachings and recommendations of that report. Furthermore, I cannot discover that the method of providing new school-houses with desks and chairs has been materially changed on account of Dr. Scudder's demonstration of its inadequacy, though the School Committee has authorized the use of crickets for children obliged to occupy seats too high for them. I have found in several instances that the requisitions for crickets had been ignored or denied. I would respectfully recommend that a sufficient number of crickets be supplied forthwith for use as foot-rests.

In passing to an account of my own investigations, made subsequently to Dr. Scudder's, it is proper to state that I quite agree with Dr. Scudder's criticisms and recommendations, and that the results of my investigations tend to corroborate and confirm his conclusions.

Malposition in writing, especially when unsuitable seats and desks are used, is a powerful factor in producing spinal deformity among school-girls. Indeed, lateral curvature of the spine has been characterized, by more than one surgical authority, as "the writing position, become fixed." One of the most cogent arguments for the introduction of the so-called vertical script is that it conduces to normal and safe positions in writing.

STUDY OF SEATING IN ONE HUNDRED ROOMS.

Dr. Scudder's investigations were confined to grammar schools for girls. It seemed best to me to include all grades of school in my study of seating. Accordingly I noted the

conditions found in one hundred class-rooms, taken at random, in primary, grammar, and high schools; in old, middle-aged, and new buildings; in boys' schools, in girls' schools, and in mixed schools. No effort was made either to avoid or seek the rooms investigated by Dr. Scudder. In general, I found a relatively larger number of rooms provided with more than one size of desks and chairs than did Dr. Scudder. But it should be noted that the mere provision of three sizes of desks is no guarantee against misfitting, as I found misfits in rooms containing three sizes of desks. In one such room, in a grammar school, I found that more than one-half of all the pupils were misfitted. It was a room which had been assigned to third-class boys for very many years, though it was fitted with desks and chairs intended for fourth-class boys.

The following figures relate to two kinds of misfit only, which for convenience are characterized as "minus-misfits," i.e., when the pupil is unable to assume an erect sitting position, with both feet flat on the floor, owing to contact between his knees and the under surface of his desk, and "plus-misfits," i.e., when the pupil, in the erect sitting position, is unable to put both feet flat on the floor — the seat being too high.

Of the 100 rooms alluded to above, there were only 18 in which no case of misfitting was found, while 733 cases of misfitting were found in the remaining 82 rooms, which contained upwards of 3,600 pupils in actual attendance. In other words, misfits were found in 82 per cent. of the classes examined, and 20.27 per cent. of the pupils in those rooms were misfitted; 8.76 per cent. of the pupils presented "minus-misfits," and 11.51 per cent. of them presented "plus-misfits." Of the whole number of misfits noted, 317 or 43.24 per cent. were minus-misfits, and 416 or 56.76 per cent. were plus-misfits, which goes to show that the number of children forced to sit in chairs that are too high is considerably greater than the

number of those obliged to use chairs and desks that are too low. In one of the high schools for boys, about one-third of the members of the first class were found occupying desks which cramped their knees, though the desks in question were of the largest size.

In 16 night-school classes, with 627 pupils in attendance, misfits were found in all but 2 rooms; 144 minus-misfits, but no plus-misfits, being found in 14 rooms containing 554 pupils. In other words, 23 per cent. of all the pupils examined were placed at desks which were too small for them. The ill effects of misfitted desks and chairs upon night-school pupils are trifling in comparison with such effects upon the rapidly growing children who make up the population of the day schools.

In one of the evening schools I was surprised to find that the tables and seats used by the pupils in the classes in mechanical drawing were uniformly of one size and unadjustable. The use of such tables is a common one, I believe. So, too, is the use of work-benches fixed at a uniform height for pupils in manual training. If pupils in drawing and manual-training classes were all of one size and height, the use of tables and benches of a single size might be justified. But classes of single-sized boys are uncommon, to say the least.

The effects of stooping, cramped, and deforming attitudes, which the use of fixed furniture entails upon pupils in mechanical drawing and manual training, are no less injurious certainly than the evil effects of forcing children to occupy unsuitable desks and chairs for hours daily. It is easy to account for the failure of most manufacturers of school-desks and chairs to study and apply the laws of animal mechanics which are involved in sitting, reading, and writing; but it is rather startling to find that the apostles and teachers of manual training and of mechanical drawing — who are nothing if not mechanical — are so oblivious and blind-minded to the mechanical laws which underlie and condition

the easy, healthful, and effectual action of the organs concerned in vision and manipulation, not to speak of those which serve to ventilate and distribute the blood. If the use of unhygienic tables, benches, and seats in teaching the arts alluded to be an unavoidable necessity, — which may be doubted, — then it is all the more necessary that general physical training and corrective gymnastics should be given a larger prominence than is accorded them, at present, by the advocates and governors of manual and industrial training.

While it would be unjustifiable to assume from the data given above in regard to 100 rooms that 20 per cent. of the pupils in 82 per cent. of all the school-rooms belonging to the city are misfitted in respect to their desks and chairs, it does seem to be tolerably clear that there is an undue amount of such misfitting, and that Dr. Scudder was right in saying, "A larger number of different-sized desks and seats, or adjustable desks and seats, should be provided."

GYMNASTICS AS A PALLIATIVE AND PREVENTIVE.

Dr. Scudder is of the opinion that "the present system of gymnastics in use in the public schools will help to overcome slight tendencies to deformity which might go unchecked and lead to disastrous results." In view of the opinion which I have expressed already in this report, with regard to the nature and effects of gymnastic exercises, I may be absolved from any intention of undervaluing the hygienic worth of physical training, when I venture to express the belief that it is too much to expect of any system of physical training (be its exercises free standing movements, exercises with hand apparatus, or exercises on gymnastic machines, if the time allowed it be limited to 16 minutes a day, as is the case in our grammar schools), that it should effectually counteract or prevent the evil effects of a system of seating which forces so large a number of pupils

who are city-bred to sit for some 200 minutes each day in seats that tend directly to produce discomfort, exhaustion, and deformity. The specific remedy for the evils which result from antiquated and unscientific methods of school-seating is not to be found in physical training, or in an abundant supply of crickets, or in the use of vertical script, but in the substitution of properly constructed seats for improperly constructed seats. Given seats and desks that are correctly constructed, much misfitting may arise if they are misplaced with relation to each other, or if the various sizes are graded according to an arbitrary or fallacious scale, or if the assortment of sizes furnished for a given class does not correspond to the assorted sizes of the children who form the class, or if the class-teacher exemplifies the doctrine that men see with their eyes rather than their brains. Consideration of the structural peculiarities of the Whitcomb desks and chairs, which constitute the great majority of those found in our schools, may profitably be deferred till after some account of the manner in which misfitting has been caused by putting ill-assorted seats into school-rooms, and of the measures taken to obviate this difficulty in providing the new Agassiz School-house with new furniture.

I selected the Agassiz School, at Jamaica Plain, as a favorable place for study and experiment in the matter under consideration, partly because its new building was in course of erection, but chiefly because of the zeal and intelligence shown by its master, Mr. J. T. Gibson, in his efforts to secure better seating in the new house than had obtained in the old one. It is but fair to say that the seating of the pupils in the old Agassiz Grammar School was less objectionable than that found in many other districts, as there were an unusual number of rooms provided with two and even three sizes of desks, and exceptional care had been taken to make the best of the seats furnished.

Still 6.2 per cent. of the pupils in the grammar school were found to be misfitted in January, 1893. In February, 1894, I found the proportion of misfits in the new building reduced to 1.2 per cent.

Mr. Gibson kindly undertook to determine the height of the pupils in his district, 668 in all, in January, 1893, and twice repeated his measurement of all grammar-school pupils (boys), between that date and February, 1894; and placed all his measurements at my disposal. The age of each pupil was noted in addition to his height. These series of measurements were used in determining how many of each size of Whitcomb desks and chairs should be placed in the new school-rooms.

Eight sizes are included in the Whitcomb scale, which purports to "embrace all the heights and sizes for pupils of the age of 5 years to 18 and upwards." The Whitcomb scale is set forth in the following tabular view:

Scale-number.	VII.	VI.	V.	IV.	III.	II.	I.	I. Extra.
Corresponding age, year	5–6	6–7	7–8	8–10	10–12	12–14	14–16	16–18
Height of chair, inches	10.5	11.25	1.35	14.5	15.5	16.75	16.75	16.75
Height of desk, inches	20.5	21.50	23 0	24.5	25.5	27.0	28.5	29.0
Difference between heights, inches . .	10.	10.25	1.15	10.0	10.0	10.25	11.85	13.25

It will be noticed that the gradation of sizes is based on the age of the pupil for whom the furniture is intended. Experience and reason show that height is a more accurate and serviceable criterion than age in this field, and that sitting-height is a better criterion than total height. But, as we do not know the sitting-height of Boston children at each year of school age, I have availed myself of the average heights of Boston school-children as determined by Dr. H. P. Bowditch, in 1875, in changing the

Whitcomb age-scale to a height-scale, which is given below:

Scale-number.	VII.	VI.	V.	IV.	III.	II.	I.	I. Extra.
Range of height in inches	41–43	44–45	46–47	48–51	52–54	55–59	60–64	65+
Corresponding age, in years	5–6	6–7	7–8	8–10	10–12	12–14	14–16	16–18

The following table is introduced to show the number of seats of each size necessary to seat the 668 pupils of the Agassiz District, in January, 1893, according (1) to the Whitcomb age-scale, and (2) the same scale expressed in terms of height:

TABLE XIV.

SHOWING THE DISTRIBUTION BY AGE AND HEIGHT OF THE PUPILS OF THE AGASSIZ DISTRICT, JANUARY, 1898, AND THE COMPARATIVE NUMBER OF DESKS AND CHAIRS REQUIRED ACCORDING TO WHITCOMB SCALE, I.E., (1) ACCORDING TO AGE, AND (2) ACCORDING TO SAME SCALE EXPRESSED IN TERMS OF HEIGHT.

Height.		Age in Years.															Total number of pupils at each height.	Whitcomb Scale reduced to inches, etc.
Inches.	Centimeters.	21.	17.	16.	15.	14.	13.	12.	11.	10.	9.	8.	7.	6.	5.	7		
71	180.3	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	
70	177.8	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	
69	175.2	. .	. .	2	2	. . .	. . .	. . .	. . .	. . .	. . .	. .	. . .	. .	. . .	. . .	4	
68	172.7	. . .	. . .	. . .	0	0	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	0	I. + 34
67	170.1	. . .	. . .	. . .	1	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2	
66	167.6	. . .	2	1	3	2	. . .	. . .	. . .	. . .	. .	. . .	. . .	. . .	. . .	. . .	8	
65	165.1	1	. . .	. . .	7	7	1	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	1	18	
64	162.5	. . .	. . .	2	3	2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	7	
63	160.2	. . .	. . .	. . .	3	5	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	9	
62	157.4	. . .	. . .	. . .	4	3	7	2	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	16	I. 77
61	154.9	. . .	. . .	. . .	3	13	4	2	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	23	
60	152.4	. . .	. . .	1	3	12	3	3	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	22	
59	149.8	. . .	. . .	1	5	2	9	5	1	1	. . .	. . .	. . .	. . .	. . .	. . .	24	
58	147.3	. . .	. . .	. . .	5	8	7	10	2	1	1	. . .	. . .	. . .	. . .	. . .	34	
57	144.7	. .	. . .	. . .	1	4	11	15	5	. . .	1	. .	. . .	. . .	. . .	1	38	II. 180
56	142.2	. . .	. . .	1	2	4	7	15	8	3	. . .	. . .	. . .	. . .	. . .	. . .	40	
							9	6	14	8	2	. . .	. . .	. . .	. . .	. . .	44	

51	129.5	...	...	...	...	...	...	1	6	9	16	3	2	...	...	...	37	
50	127.0	...	...	...	...	...	1	. .	...	7	11	15	2	...	...	...	36	
49	124.4	...	...	...	...	...	...	...	...	5	4	14	1	...	...	...	24	IV. 120
48	121.9	...	...	...	...	...	...	...	...	...	4	12	6	1	...	...	23	
47	119.3	...	...	...	...	...	...	...	...	1	...	4	14	2	...	...	21	
46	116.8	...	...	...	...	...	...	...	...	1	...	5	10	1	...	...	17	V. 38
45	114.3	...	...	...	...	...	...	...	...	...	...	3	4	8	2	...	17	
44	111.7	...	...	...	...	...	...	...	...	...	1	...	5	3	5	...	14	VI. 31
43	109.2	...	...	...	...	...	...	...	...	...	...	...	2	10	5	...	17	
42	106.6	...	...	...	...	...	...	...	...	...	...	...	3	6	2	...	11	VII. 35
41	104.1	...	...	...	...	...	...	...	...	...	...	...	...	3	4	...	7	
40	101.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	
Total number of pupils at each age		1	2	8	44	68	71	78	89	81	57	65	50	32	20	2	668	668
Sum-mary.	Whitcomb Seats.	Extra I. +			I.		II.		III.		IV.		V.	VI.	VII.			
1.	Seats called for by age-scale	11			112		149		170		122		50	32	20	2	668	
	Seats furnished	0			88		148		141		156		60	81	28		702	
	Difference	− 11			− 24		− 1		− 29		+ 34		+ 10	+ 49	+ 8			
2.	Seats called for by height-scale	34			77		180		153		120		38	31	35		668	
	Seats furnished	0			88		148		141		156		60	81	28		702	
	Difference	− 34			+ 11		− 32		− 12		+ 36		+ 22	+ 50	− 7			

The above table shows the number of pupils, at each inch of height from 40–71, and at each year of age from 5–21, in the Agassiz District, at the time mentioned. The totals at the bottom of the table are grouped to show the number of seats called for by the Whitcomb age-scale; and the totals at the right of the table are grouped to show the number of seats called for by the height-scale given above. In the summary, the number of seats of each size actually furnished is also given. From inspection of the figures in the column marked "Difference," it will be seen that the assortment of seats actually furnished does not correspond with either scale, i.e., the seating was arbitrary and hap-hazard. Judging by the Whitcomb age-scale, the standard purporting to be used, we find that too many seats ranging in size from VII.–IV. and too few of sizes III.–I. Extra were furnished. Of misfits 41, or 6.1 per cent., were found among 668 pupils; of these 29, or 6.2 per cent., were in the grammar grade, and 12, or 5.8 per cent., were in the primary grade.

One of the most striking facts brought out by the three series of measurements in respect to height — made of the pupils of the Agassiz Grammar School, who were all boys — is the variation of the average height in the same class from year to year, and even from half-year to half-year. This variation, which is inevitable in classes whose pupils are growing at a rate of from 1–3 inches annually, greatly enhances the difficulty of providing a sufficient number of seats and desks of assorted sizes, *unless the seats and desks are adjustable.* The appended tables serve to show how the demands for assorted sizes may vary at short intervals in the same class-room, owing to the changing stature of the pupils.

SHOWING PER CENT. OF DESKS AND CHAIRS OF EACH SIZE (NO. I. EXTRA–NO. VI.) CALLED FOR (1) BY AGE–SCALE, (2) HEIGHT–SCALE, AND (3) THE PER CENT. OF EACH SIZE ACTUALLY FURNISHED: A. IN OLD AGASSIZ GRAMMAR SCHOOL; B. IN NEW AGASSIZ SCHOOL–HOUSE.

Whitcomb-scale Number.		No. I. Extra.		No. I.		No. II.		No. III.		No. IV.		No. V.		No. VI.		Misfits.		No. of sizes furnished.	
	Per cent. of each size.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
Class I.	Called for by age scale	14.6	2.6	73.1	7.6	12.1	21.0	1.8											
	Called for by height-scale	41.5	28.9	39.0	39.4	19.5	31.5	3.7											
	Actually furnished	0.0	13.1	50.0	47.3	50.0	39.4	13.7	...	...	...	...	...	...	...	9.7	0.0	2	3
Class II.	Called for by age-scale	7.4	7.6	51.8	51.9	38.8	40.3	1.8	0.0										
	Called for by height-scale	16.7	17.3	33.3	30.7	46.3	44.2	3.7	7.6										
	Actually furnished	0.0	5.7	41.3	38.4	44.8	50.0	13.7	5.7	...	...	...	...	...	...	7.4	0.0	3	3
Class III.	Called for by age-scale	0.0	8.9	27.2	26.7	63.6	57.1	9.0	7.1	0.0									
	Called for by height-scale	3.6	7.1	29.1	32.1	54.6	48.2	10.9	12.5	1.8									
	Actually furnished	0.0	0.0	40.6	25.0	30.5	50.0	28.8	25.0	0.0	...	...	...	...	...	1.8	1.7	3	3
Class IV.	Called for by age-scale	0.0	5.3	19.7	19.6	44.3	51.7	36.0	23.2	...	0.00								
	Called for by height-scale	4.9	12.5	16.4	19.6	44.3	50.0	34.4	16.0	...	1.7								
	Actually furnished	0.0	0.0	1.6	12.5	51.3	39.2	40.9	37.5	...	10.7	...	...	...	...	6.5	7	2	4

TABLE XV. — *Continued.*

	Whitcomb-scale Numbbr.	No. I. Extra.		No. I.		No. II.		No. III.		No. IV.		No. V.		No. VI.		Misfits.		No. of sizes furnished.	
	Called for by age scale . .	1.6	7.1	25.0	8.9	35.0	50.0	36.7	32.1	1.6	1.7								
Class IV.[2] .	Called for by height-scale .	3.3	3.5	16.7	19.6	40.0	51.7	35.0	25.0	5.0	0.0								
	Actually furnished . . .	**0.0**	**0.0**	**1.5**	**14.2**	**17.6**	**46.4**	**52.3**	**28.5**	**28.0**	**10.7**	. . .	. . .	. . .	. . .	**6.6**	**0.0**	**4**	**4**
	Called for by age-scale . .	. . .	0.0	. . .	19.6	. . .	48.2	. . .	32.1	. . .	0.0								
Class IV.[3] .	Called for by height-scale	. .	1.7	. .	12.5	. . .	53.3	. . .	32.1	. . .	0.0								
	Actually furnished . . .	. .	**0.0**	. . .	**0.0**	. .	**44.6**	. . .	**42.8**	. . .	**12.5**	. . .	. . .	. . .	. . .	. . .	**5.3**	. .	**3**
	Called for by age-scale . .	0.0	. . .	14.7	1.7	37.7	23.2	44.3	60.7	3.3	14.2	0.0	0.0						
Class V. .	Called for by height-scale .	1.6	. . .	8.2	3.5	49.2	33.9	32.8	39.2	6.6	19.6	1.6	3.5						
	Actually furnished	**0.0**	. . .	**0.0**	**0.0**	**20.6**	**26.7**	**38.0**	**46.4**	**41.2**	**19.6**	**0.0**	**7.1**	. . .	. . .	**3.2**	**1.7**	**3**	**4**
	Called for by age-scale . .	. . .	. . .	5.4	3.5	10.7	8.9	71.4	60.7	12.5	26.7	. . .	0.0						
Class VI.	Called for by height-scale .	. . .	. . .	1.8	1.7	28.6	21.4	55.3	39.2	14.3	33.9	. . .	3.5						
	Actually furnished	. . .	. . .	**25.4**	**1.7**	**27.1**	**14.2**	**16.9**	**26.7**	**30.5**	**50.0**	. . .	**7.1**	. . .	. . .	**14.2**	**0.0**	**4**	**5**
	Called for by age-scale . .	. . .	. . .	1.3	0.0	10.8	5.4	55.4	69.0	32.4	25.4	0.0	0.0	0.0					
Class VI.[2] .	Called for by height-scale .	. . .	. . .	0.0	0.0	21.6	27.2	37.8	40.0	57.8	30.9	1.4	1.8	1.4					
	Actually furnished	. . .	. . .	**1.2**	**0.0**	**13.7**	**18.1**	**35.0**	**32.7**	**50.0**	**41.8**	**0.0**	**7.2**	**0.0**	. . .	**2.7**	**0.0**	**4**	**5**

N.B. — The per cents. in the columns marked A refer to analysis of investigation made in January, 1893; those in columns marked B, to the investigation made in February, 1894. The seats "actually furnished" in the first case purported to correspond to Whitcomb's age-scale. The distribution of the seats occupied in February, 1894, was based on measurement of the height of the occupants of the seats, *and observation of their sitting-height besides.*

...ies of the occupants of the seats, *and observation of their sitting-height besides.*

The above table is constructed to show the per cent. of seats of each size called for, in each class, by the age and height-scales already cited, at periods a year apart. It also affords a comparison between the distribution of seats actually furnished the pupils of the Agassiz Grammar School, and between the percentage of misfits in the old building and the new building. The figures in the column marked "A" relate to conditions found in January, 1893, while those in the column marked "B" relate to conditions found in February, 1894, after the new building had come into use. The seats actually furnished in fitting up the new building were assorted in accordance with the results of the measurements made in January and September, 1893. Still, the scale based on total height was found to be approximative only, and when the assignment of seats came to be made it was found necessary to adopt the *sitting-height* as the criterion, in many instances. This leads to the conclusion that absolute accuracy in the seating of growing children cannot be secured, unless their individual peculiarities in regard to stature, length of trunk, length of leg, etc., are taken into account. Even where adjustable furniture is used, average heights cannot be implicitly relied upon as criteria.

TABLE XVI.

SHOWING DIFFERENCE BETWEEN PER CENT. OF DESKS CALLED FOR BY WHITCOMB AGE–SCALE, THE SAME EXPRESSED IN TERMS OF HEIGHT, AND THE PER CENT. OF EACH SIZE OF DESKS FURNISHED TO AGASSIZ GRAMMAR SCHOOL, JANUARY, 1893, AND FEBRUARY, 1894.

Scale Number of Desk-size.	Scale.	Per Cent. of Desks. At first measurement, January, 1893.			Per Cent. of Desks. At third measurement, February, 1894.		
		Called for by scale.	Furnished.	Difference.	Called for by scale.	Furnished.	Difference.
No. I. Extra . .	Scale of age	2.3	0.0	−0.3	3.5	0.0	−3.5
	Scale of height	7.3	0.0	−7.3	7.0	17.7	−7.0
No. I.	Scale of age	24.4	17.7	−6.7	20.9	17.7	− .2
	Scale of height	16.4	17.7	+1.3	16.8	17.7	+0.9
No. II.	Scale of age	31.6	31.1	−0.5	34.3	31.1	−3.2
	Scale of height	38.0	31.1	−8.9	40.5	31.1	− .4
No. III.	Scale of age	34.1	29.8	−4.3	33.0	29.8	−3.2
	Scale of height	27.9	29.8	+1.9	34.5	29.8	−4.7
No. IV.	Scale of age	7.3	21.0	+13.7	8.1	21.0	+12.9
	Scale of height	9.5	21.0	+11.5	9.9	21.0	+11.1
No. V.	Scale of age	0.0	0.0	0.0	0.0	0.0	0.0
	Scale of height	0.4	0.0	−0.4	1.0	0.0	−1.0
No. VI.	Scale of age	0.0	0.0	0.0	0.0	0.0	0.0
	Scale of height	0.2	0.0	−0.2	0.0	0.0	0.0

N.B. — In January, 1893, there were 29 misfits among 462 boys, o . per cent.
In February, 1894, there were 6 misfits among 481 boys, or 1.2 per cent.

The above table shows that the requirements as regards the number of seats of a given size will vary in a given school according as the pupils vary in height from time to time; and favors the contention that when fixed desks and chairs (graded according to an average-age or an average-height standard) are used, the necessity for re-sorting and re-arranging them is likely to recur frequently. In other words, the above table makes for the superiority of adjustable over fixed desks and chairs.

TABLE XVII.

SHOWING PER CENT. OF DESKS OF EACH SIZE OF WHITCOMB DESKS CALLED FOR (1) BY AGE-SCALE, (2) BY HEIGHT-SCALE, AND (3) FURNISHED IN ACCORDANCE WITH SITTING-HEIGHT OF 481 PUPILS IN NEW AGASSIZ GRAMMAR SCHOOL, FEBRUARY, 1894.

Desk-number.		No. I. Extra.	No. I.	No. II.	No. III.	No. IV.	No. V.	No. VI.
Per cent. of each size.	Called for by age-scale	3.5	20.9	34.3	33.0	8.1	0.0	0.0
	Called for by height scale . .	7.0	16.8	40.5	34.5	9.9	1.0	0.0
	Furnished according to sitting-height	1.6	14.1	36.3	28.4	16.8	2.4	0.0
	Differences bet. height and sitting-height scale	5.4	2.7	4.2	6.1	6.9	1.4	0.0

Experiment showed, in the case of the Agassiz School, that less misfitting resulted from assorting desks and chairs in accordance with the sitting-height of pupils than when a scale based on total height was used. Table XVII. is introduced to illustrate the difference between the requirements of the age, height, and sitting-height scales, as applied to the

problem of providing a sufficient number of assorted sizes of Whitcomb seats for the use of the pupils in the Agassiz Grammar School in February, 1894.

Table XVIII. shows the number of pupils at each inch of height from 41 to 71 inches in the Agassiz district, January, 1893, and affords a comparative view of the number of seats of each size required according to the Whitcomb scale reduced to terms of height, and the standards adopted at Frankfort on the Main, in 1885, by the Prague Commission in Bohemia, in 1892–93, by the Vienna Commission of Experts, and by G. A. Bobrick, C.E., of Boston, the inventor of a system of adjustable desks and chairs. All of the scales but the last mentioned relate to fixed furniture, and all of them are based on average bodily height as a modulus. The scale-numbers of the Bobrick scale stand for positions in which his *three sizes* of desks and seats may be adjusted. It is evident from inspection that adjustable furniture is capable of being much more accurately adapted to pupils differing in height. The Frankfort, Prague, and Vienna scales are based on careful measurements of large numbers of school-children for whose use the variously sized desks were intended. The height of children of different races varies so widely that the adoption for American children of any European height-scale for the purpose of grading fixed seats would almost certainly prove illusive and disappointing. No thoroughly accurate and adequate scale for determining the proper range of height in grading seats for Massachusetts children can be made until large numbers of city and country children in different parts of the State have been measured and remeasured in respect to total and sitting-height. The preparation and promulgation of such a scale might well be undertaken by a Massachusetts School Desk Commission, should such a commission be organized. It is hardly likely that the manufacturers and vendors of school-furniture will ever engage in an undertaking so purely scientific.

N AGASSIZ DISTRICT, 1893, ACCORDING TO VARIOUS

Num	16	9	7	18	8	2	0	4	1	1	
H. B	62	63	64	65	66	67	68	69	70	71	
	157.4	160.2	162.5	165.1	167.6	170.1	172.7	175.2	177.8	180.3	
Whi	No. I.				No. I. extra large.						
No.	77				34						668
Fram		No. VI.			No. VII.					No. VIII.	
No.		34			15					1	668
Prag	No. XI.				No. XII.						
No.	32				34						668
Vien	No. VI.				No. VII.			No. VIII.			
No.	55				28			6			668
Bobr	No. XII.		No. XIII.		No. XIV.		No. XV.		No. ?		
No.	25		25		10		4		2		668
Seats	No. I.				No. I. extra large.						
	88				0						702
	+ 11				— 34						

SCHOOL-DESK REFORM IN AMERICA.

The movement for school-desk reform may be said, in a sense, to have originated in this country. The teachings and efforts of Henry Barnard, Superintendent Philbrick, and others led to the now general custom of providing individual pupils with separate desks and chairs. The practice of seating two or more pupils at the same desk is even now much more common in some European countries than in the United States. But scientific men in America have not shown so much activity or interest, as their brethren in Europe, in the practical study of the principles of school-desk construction in the interim since Barnard's classic work on "School Architecture" appeared in 1860. Much "inventive genius" has been expended on mechanical contrivances tending to cheapen the production of school furniture and to facilitate its convenient use. But with rare exceptions our inventors and manufacturers have contributed but little towards the solution of the real problem, which is to provide each pupil with a seat and desk accurately adapted to his individual needs as a sedentary animal overmuch given to reading and writing. Within the last three years much activity has been displayed by inventors in devising desks and chairs that can be raised and lowered. This is a move in the right direction, since it is likely to awaken the interest and enlist the aid of medical and pedagogical experts in promoting still further progress. Evidence of increased interest in questions pertaining to school-seating, along with other branches of school hygiene, is found in Dr. D. F. Lincoln's "The Sanitary Conditions and Necessities of School-Houses and School Life;" in an article, in Vol. II., No. 1, of the Pedagogical Seminary, on "Outlines of School Hygiene," by William H. Burnham, Ph.D., Docent in Pedagogy at Clark University, Worcester, Mass.; and in the "Seventh Annual Report of the Board of Health

of the State of Maine," by its secretary, A. G. Young, M.D. Dr. Young's report is characterized by a recent German reviewer as "no mere report, but a hand-book on school hygiene." Dr. Burnham's article and Dr. Young's report are particularly valuable because of their judicious and copious citations from recent foreign literature.

NEED OF AN EXPERT COMMISSION.

The activity of inventors and manufacturers in multiplying new forms of adjustable school furniture needs guidance and criticism from competent experts; otherwise the most essential principles of seating will continue to be ignored (as is generally the case at present) and tax-payers will be called upon to make large expenditures for furniture that does not really represent "the present state of the art." If there is to be a radical and thorough-going reform of school-seating among us, it behooves us to take into account the advance that European scientists and manufacturers have brought about during the last twenty years. Thus, and not otherwise, shall we be enabled to begin where they leave off. The best means to secure this end in our Commonwealth would be the constitution of a Massachusetts Expert School-Desk Commission to promulgate a declaration of principles for the guidance of manufacturers, school-boards, and teachers. The hygienic and economic interests involved in this problem are too large and too intricate to permit its solution to be left elsewhere than in the hands of a sufficient number of representative experts.

CONCERNING SCHOOL-DESKS IN BOSTON IN 1841.

The following extract from a report to the Boston School Committee, made by Mr. George S. Hillard, Chairman of the Annual Committee for the Grammar Department, Aug. 3, 1841, possesses some historical interest:

The schools are too crowded and the seats are not properly constructed. There is not a single school which has come under the observation of your committee in which the seats are adapted, as they ought to be, to the young and growing frame. Especially do the girls suffer from this cause, from their greater delicacy of organization and less hardy habits of exercise. Such seats cannot be viewed without pain by any one acquainted with the principles of physiology. Their inevitable tendency is to produce diseases of the spine and chest, and to lay the foundation of chronic complaints, which will embitter life, if they do not shorten it. Public attention is not called to this subject, because the connection is not perceived between the cause and the effect; but if the community could only realize the extent of the evil, and have brought before their senses, in some perceptible form, the consequence of this violation of the natural laws, we believe that a reform would be insisted upon, and no consideration of economy would be allowed to stand in the way of it. Indeed, a truly enlightened economy, no less than higher motives, would make the health of our children a matter of the first importance and remove or alter every thing that operated unfavorably upon it.

COHN'S STUDY OF SEATING IN RELATION TO MYOPIA.

School-desk reform first became a burning question in Europe, owing to the results of the investigation which Dr. Cohn, Professor of Ophthalmic Science in the University of Breslau, made in 1865 of the eyes of 10,060 Breslau school-children. Summarily stated the investigation showed that "*in every school the number of short-sighted children increased from class to class.*" Cohn was led to attribute in large measure the increase of short sight to the use of bad desks. His remarks on this subject are of special interest, as may be seen from the following passage taken from the English translation of his "Hygiene of the Eye in Schools," published in London in 1886:

Many years ago the orthopædic doctors had pointed out the *school-desk* as the thing above all others tending to originate spinal curvature. The American writer, Barnard, in his great work on "School Architecture" (1860) upheld the principle that during writing the form (bench) ought to be close up to the desk. Schreber, Schraube, Passavant, Freygang,

Fink, and Zwez also insisted on the importance, for the scholars' normal growth, of well-constructed desks; but they did not see wherein lay the very chief defect of the old school-desks.

The question was dealt with from a wholly new point of view by Dr. Fahrner, of Zürich, who in his small but classical book "The Child and the School Desk" (1863) pointed out *why* the children could not possibly sit upright for long at a time at the old desks, why they were forced to fall forward, and why a thorough reform in the make of school-desks was necessary. . . . When in 1865 I had studied Fahrner's admirable work and had begun my examination of the eyes of the Breslau school-children, the question pressed itself upon me: How far may the old desks in our schools be answerable for the origin and development of short sight?

To obtain an answer to this question, I first of all measured the height of 10,060 children in the 166 classes examined. I then measured the desks with reference to desk-height (back and front), desk-width, form-height, and form-width, difference and distance between desk and form, between form and foot-board, etc. I thus found that these old desks were *opposed to every reasonable hygienic requirement*, and were set up quite arbitrarily and without any reference to the height of the children in the classes. Pupils three feet six inches and five feet two inches in height sat at the same desk. [*Misfitting nearly as bad as this can still be found in Boston schools.*]

But apart from this fundamental error, I found that scholars, even when the desk was suited to their height, *were forced* by the old forms (seats) *to stoop forward and bring the eye very close to the writing*. That is just how myopia can be produced and increased.

CARDINAL POINTS IN DESK CONSTRUCTION.

The points which are of main importance in school-desks are four: the difference, the distance, the seat-height, and the desk-slope.

(1.) *The Difference*, that is, the vertical distance, between desk and seat. (See M D, Fig. 1.) The higher the desk-surface the nearer it is to the eye of a straight-sitting child. Thus the greater the difference the more the child will have to exert his accommodation. Now, the writing ought to be from 35 to 45 centimeters [14–18 inches] from the eye, for that is about the distance of a child's eye from the elbow when hanging straight down, and the text of the school-books should be easily legible at that distance. If, however, the difference is great, so that the elbows have to be considerably raised in writing [*as is generally the case in our Boston schools*] the shoulders will not hang from the body, but the body from the shoulders, and the writing hand will be too near the eye.

(2.) An exceedingly important correlative of the difference is the horizontal *Distance* between desk and form. (See D, Fig. 1.) In the right arrangement of distance lies the kernel of the school-desk reform. The greater the distance the more the body will have to fall forward of the seat in order that the arms may reach the paper; and the more will the head be obliged to drop and to get near the writing. Thus, whenever we intend to sit upright at a table for a considerable time, we instinctively push the chair so far under the table that the table's edge is vertically over the chair's edge, or, if possible, overhangs it by an inch. *For the upright position of the head, therefore, the distance must be nil or, still better, negative.* . . . I once proposed a minus distance of one inch; but after further observations I think that the upright position is sustained still longer when the thigh is supported still further towards the knee, and therefore I agree with Buchner, who requires a minus distance of two inches.

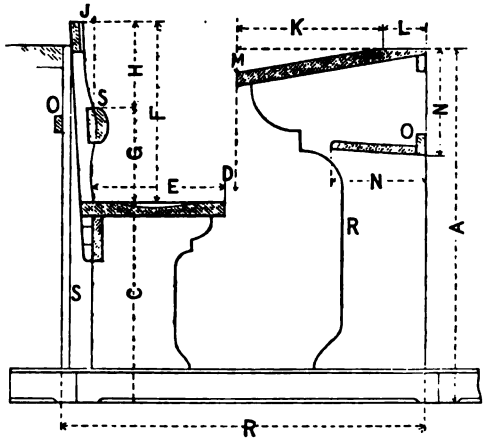
Here every inch is of consequence. No physician has ever opposed the requirement of nil or minus distance . . . the opposition has come solely from *individual teachers.*

(3.) *The Height of the seat.* (See C, Fig. 1.) If the legs are not bent at a right angle at the knee and the feet resting with the entire sole flat upon the foot-board (or floor), the feet must be left dangling in the air. Then the child soon grows tired. He tries to reach the floor with the tips of his toes at least, and in so doing he bends the thigh downward, slides forward on the edge of the seat, and presses his chest on the edge of the table. The necessary result is a further collapse of attitude. (In all this we are leaving quite out of account the hindrance to breathing and the compression of the intestines.) *The height of the seat must accordingly be equal to the length from the knee to the sole, that is, ¼ of the child's height.* The knee must be bent at a right angle. No attention is paid to any of these proportions in the old school-desks.

(4.) *The Slope of the desk.* (See K, Fig. 1.) We can read easily, without any stoop of the head, from a book placed *vertically* before us. If the book slopes back at an angle of 45 degrees with the horizon, reading is equally easy, because the eyes can be directed downward without bending the head forward. But if the book lies flat and the reader sits upright, the eyes are turned downward very far. This continued for any considerable time is very tiring and so we prefer to bend the head forward. It follows that the desk must not be horizontal, but sloped. A slope of 45 degrees, however, is not to be recommended, because it would make writing difficult and the writing materials would fall down. A slope of 1 in 6 is the best. The old school-desks are all flat and therefore wrong.

NORMAL DIMENSIONS OF DESK AND SEAT.

Figure 1, adapted from a similar cut in Eulenberg and Bach's "Schulgesundheitslehre, Berlin, 1891," p. 217, will be of assistance to us in further discussing the normal dimensions of desks and seats. It represents the dimensions recommended by Eulenberg and Bach, for a seat and desk adapted to a pupil 175 centimeters (68.89 inches) in height. R, the total depth of desk and seat, equals 78 centimeters. A, the outer height of the desk, equals 64 centimeters. C, the



inner height of the desk, equals the sum of the lines C and M D, *i.e.*, 78 centimeters, — C being 48 centimeters ($\frac{8}{11}$ of the total bodily height), and M D being 30 centimeters, or about 17 per cent. of the total height. The width of the horizontal part of the desk L equals 10 centimeters and that of the sloping part K equals 35 centimeters. The book-shelf N is placed 25 centimeters ($\frac{1}{7}$ of the body-height) below the surface of L, and is 22 centimeters ($\frac{1}{8}$ of the body-height) in width. C, the height of the seat, equals 48 centimeters ($\frac{8}{11}$ of the body-height). The length of the seat equals 58 centi-

meters ($\frac{1}{3}$ the body-height). E, depth or breadth of seat, equals 35 centimeters ($\frac{1}{5}$ the body-height). The total height of the back-support equals 44 centimeters ($\frac{1}{4}$ the body-height); G, the total height of cross-rest (S) for the small of the back, being 22 centimeters ($\frac{1}{8}$ the body-height). The back-support slopes backward, it will be noted, some 3 centimeters, so that J, the shoulder-rest, cannot come into contact with the pupil's back unless the upper part of the pupil's trunk is slightly inclined beyond the perpendicular line J S. This is to enable the pupil to assume the so-called "back-sitting" or "reclined position" which is strongly advocated by Prof. A. Lorenz, one of the most eminent of European orthopædic surgeons. Lorenz's "Die Heutige Schulbankfrage, Wien, 1888," contains the most thorough-going and satisfactory critique of various styles of modern desks that has come under my notice. Eulenberg and Bach recommend the "reclined-sitting position" as the simplest measure for preventing the increase of short-sight among school-children. They also recommend hollowing out the seat to a depth of $1\frac{1}{2}$ centimeters as shown at E, instead of inclining the surface of the seat from front to rear. It will be observed that the line M D, technically called "the difference," does not strike the edge or surface of the seat. The result is that "the distance," *i.e.*, the distance between the rear edge of the desk and the forward edge of the seat, is a plus or positive distance, which was usually found in school-seating twenty-five years ago, but which is almost universally condemned by modern authorities, since it involves the necessity of leaning forward in writing, which is sedulously to be avoided. In the present case the plus distance noted is a concession to convenience, since it is easier for a pupil to get in and out of his seat when the distance is plus than when it is minus; *i.e.*, when the line M D falls inside the line made by the front edge of the seat, or when the distance is nil; *i.e.*, as when the line M D just

strikes that edge. The best European desks are now made so that the desk-plate can be shoved forward to a plus distance for reading or other purposes, and be drawn down to a minus or negative distance of 2–10 centimeters when the desk is to be used for writing. There is no manner of doubt as to the superiority of a desk having a minus distance for writing purposes. The fact that desks set at a positive distance from their chairs are less commonly met with in the Boston schools than might be expected is worthy of special mention.

The dimensions of the desk figured above, which is intended for a pupil 175 centimeters (68.89 inches) in height, can be proportionately increased or diminished, it is claimed by Eulenberg and Bach, so as to furnish the dimensions for a series of desks and seats which shall correspond to the needs of pupils of various heights, so long as there is no marked disproportion between the length of trunk and legs in such pupils. The authors declare that the height of each pupil in a class should be determined at the beginning of each half year, as a guide to assigning him a seat.

Various standard tables, based on bodily height as the modulus, have been promulgated in different parts of Europe to show the dimensions which should be embodied in a series of graded school-desks, for children ranging between six and fourteen years of age. So great is the variation in height among children of the same age belonging to different races and social classes, that it would manifestly be unsafe to adopt a German or Austrian or Russian scale, without modification, as a standard for grading school-desks in Boston or Massachusetts. But the scales adopted in various parts of Europe will repay our careful study since they are based on experiment and reason, and go far towards showing how the problem of school-seating is to be solved.

The following articles are cited for the benefit of those who may wish to make a detailed comparison of some of the

principal tables of standard dimensions adopted by European experts and commissions: (1) "Zur praktischen Lösung der Subsellienfrage von Stadtarzt Dr. A. Spiess in Frankfurt am Main." Deutschen Vierteljahrsschrift f r öffentliche Gesundheitspflege. Bd. XVII. Heft. 2; (2) "Die Schulhygiene auf der Jubiläumsausstellung der Gesellschaft für Beförderung der Arbeitsamkeit, in Moskau, von Dr. Fr. Erismann, Professor der Hygiene an der Universität in Moskau," in Zeitschrift tür Schulgesundheitspflege, 1888, No. 10; (3) "Zur Entwickelung der Schulbankfrage in Prag," *ibid.*, 1893, No. 4; (4) "Schulbankausstellung in Wien," *ibid.*, 1894, No. 7. The article last cited contains a brief account of the exposition of school-desks, held in Vienna, January, 1894, in which 49 styles of desk were exhibited in response to the offer of prizes made by the Vienna Expert Commission in 1892.

The table adopted by the Prague Commission in 1892–93 is introduced below, as it is the latest, and in some respects the fullest and most suggestive, that has come under my notice.

TABLE XIX.

SHOWING NORMAL DIMENSIONS * OF DESKS AND SEATS, I.–XII., GRADED ACCORDING TO RECOMMENDATIONS OF PRAGUE EXPERT COMMISSION ON SCHOOL–SEATING, 1892–93.

Desk Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.
1. Age of pupil	6.	7.	7.	8.	8.	9.	9.	11.	11.	13.	13.	14.
2. Height of pupil	95–104	105–110	111–116	117–122	123–128	129–134	135–140	141–146	147–152	153–158	159–164	165 +
3. Height of desk, corresponding to MD and C in Fig. 1	52	55	56	59	61	63	66	68	70	72	75	78
4. Height of seat, corresponding to C in Fig. 1	29	30	32	34	35	36	38	40	41	42	44	46
5. Negative distance	10	10	10	10	10	10	10	10	10	10	10	10
6. Positive distance, corresponding to space D in Fig. 1	8	8	8	8	8	8	8	8	8	8	8	8
7. Difference between desk and book-shelf, corresponding to Z in Fig. 1	10	10	10	10	10	12	12	12	12	13	13	13
8. Difference, corresponding to MD in Fig. 1	23	23	24	25	26	27	28	29	29	30	31	32
9. Inclination of desk, M to L in Fig. 1	18°	18°	18°	18°	18°	18°	18°	18°	18°	18°	18°	18°
10. Inclination of back of seat, JE in Fig. 1	10°	10°	10°	10°	10°	10°	10°	10°	10°	10°	10°	10°
11. Inclination of seat, E in Fig. 1	8°	8°	8°	8°	8°	8°	8°	8°	8°	8°	8°	8°
12. Depth of seat, E in Fig. 1	23	23	24	24	25	25	26	27	28	29	30	31
13. Width of open space between seat and lower edge of back-support	12	12	13	13	14	14	14	14	15	15	15	16

* The dimensions given in this table are given in centimeters.

The desks made according to the Prague-scale number twelve sizes, while most other systems provide for only eight or at most nine sizes of desks. The larger assortment is an advantage, in a system of fixed seats and desks, since it conduces to finer gradation of sizes and a nearer approach to accurate adaptation of seats to the structural peculiarities of their occupants. Lorenz, in the brochure already cited, figures more than 30 styles of school-desk, but not one of them is adjustable for height, though many of them are provided with devices for changing the "distance" between desk and seat from negative to positive and *vice versa*. The Prague desks belong to the latter class.

CONCERNING AMERICAN ADJUSTABLE SCHOOL-DESKS.

Our American adjustable desks are adjustable as regards difference; *i.e.*, the vertical distance between desk-surface and seat-surface, but as a rule are fixed as regards "distance." An ideal adjustable desk and chair should be adjustable not only for distance and difference, but also with regard to the back-support and the desk-slope. The Chauncy Hall School, of this city, is furnished with desks (designed some twenty years since in accordance with the suggestions of eminent Boston surgeons and oculists of that day) which are readily adjustable for distance and desk-slope, but not for difference. The Chauncy Hall desk, though a marked improvement on its predecessors, and most of its contemporaries, has had little or no effect upon manufacturers and inventors, and seems to have been absolutely ignored by school-authorities.

As a rule the back-supports of the fixed chairs used in our schools are inadequate to their purpose, since their backward slope is too great, and they do not provide proper support for the lumbar portion of the pupil's back. The desk-surface is nearly always too high and inclined at too

small an angle. The new adjustable desks, as a rule, are as objectionable as the old in these respects, it may be remarked. It would be bad policy, manifestly, to adopt adjustable furniture in a wholesale way so long as the inventors and makers of such furniture change their adjustment-devices from year to year, and fail to turn out desks and chairs that are hygienic in all respects, instead of in one or two only.

It is extremely desirable, in my opinion, that the present needless misfitting in the Boston schools should be reduced. The most feasible way to reduce it at the present time, as is shown by our experience in fitting up the class-rooms of the new Agassiz Grammar School, is to re-distribute the desks and chairs now in use, so that each room shall have at least three sizes of desks and chairs. In several of the Agassiz School rooms odd-sized desks were placed in the front row, in order to meet the needs of deaf and short-sighted children. Had one or two rows of adjustable desks been placed in each of the Agassiz School rooms, I believe that misfitting, in the sense in which that term is used in these pages, would have been reduced to nothing, or at least to a fraction of one per cent.

Something over a year ago the new primary school in the Prince district was furnished with adjustable desks and chairs. The chairs in question have back-supports that are better adapted to their purpose than is the case with most of the fixed chairs now in use in our schools. But I found a good deal of misfitting in the Prince Primary School, partly because the adjustable feature of the desks and chairs had been too slightly availed of by the teachers in charge, but chiefly because the adjustable desks in question are constructed on wrong principles. They are supported by a central pillar of cast-iron with a wide flange at the bottom. The flanges of the chair and desk-pillars are placed so near each other (and for primary-school children they must be so placed) *as to prevent the children from placing*

their feet flat upon the floor, even when desk and chair are properly adjusted as to difference. It is possible to construct a truly hygienic one-pillared adjustable desk, but I have never seen one. It should be said that the newest forms of adjustable desk are not open to the objection urged above, since they are supported by two brackets, instead of a single central pillar.

It seems not unlikely that an adjustable desk and seat which shall deserve the appellation of "hygienic" will be evolved in the United States within the next ten years, especially if scientific experts can be induced to lend their aid in determining the dimensions and proportions of such furniture. But there is abundant evidence, it seems to me, that the time has not yet arrived for the general adoption of adjustable school-desks by the city of Boston or the cities of Massachusetts. Meanwhile let school authorities, medical and mechanical experts, and manufacturers take concerted action, in order that that time may be hastened!

IN CONCLUSION.

In general terms it may be said that there has been healthy growth and expansion in the department of physical training during the interval since my last report in December, 1891. The policy of holding frequent normal classes for the teachers of the grammar and primary schools has been followed with good results and will be continued. Toward the close of the school-year 1891–92 the experiment was made of examining and marking the grammar-school classes throughout the city, and of furnishing the master of each school with a detailed statement as to the proficiency and rating of the several classes under his charge. The results of this experiment were so stimulating and helpful that the practice has become a fixed policy. It should be said, however, that the detailed statement sent

to each master relates solely to the classes in his own school. The results of the annual inspection and rating serve also for the guidance of the director and his assistant in bestowing special aid to those teachers who need it most.

The novelty of the situation, due to the introduction of an orderly, progressive system of instruction in gymnastics, has worn off for the most part; and the ancient misleading notion that physical training is chiefly useful to afford an easy and inexpensive vent for the ticklesome "animal spirits" of tired and restless children and to enhance the liveliness and attractiveness of school exhibitions has been dissipated to a considerable degree, and bids fair to disappear utterly — at least among the teachers — as time goes on. Increased experience on the part of the teachers in conducting class-exercises in gymnastics at the word of command, and their growing familiarity with the aims and methods peculiar to the Swedish school-gymnastics, have led to marked improvement in the manner and results of their instruction. This improvement has taken place all along the line, but has been particularly marked and gratifying in certain schools and classes in which comparatively feeble interest in the new gymnastics was manifested at the outset.

My main aim is to secure steady, sustained, and increasingly intelligent effort on the part of the class-teachers, so that gymnastics shall become a regular, inevitable part of the daily course of instruction, receiving due attention, no more, no less. To this end, now that the mass of the teachers have acquired a fair amount of technical skill in conducting gymnastic instruction, — I propose to throw greater stress than seemed advisable at first upon the principles of physical training and its relations to other branches of instruction. This is the more necessary as, prior to entering upon their professional work, the great majority of teachers had no

normal training, to speak of, in any form of physical training, properly so called.

The normal schools of Massachusetts, as well as those of the country at large, judging from their generally apathetic, incurious attitude in such matters, have still to learn that physical training has a history and a literature which furnish convincing evidence of the feasibility as well as the desirability of making physical education an organic part of the professional training of teachers in elementary and secondary schools. The present movement for the advancement of physical education can never accomplish its perfect work, so long as public normal schools as a class are content to rest in happy ignorance of the principles, methods, and achievements of modern school-gymnastics and gymnastic games.

The full and lasting success of Boston's present tentative effort to profit by the example and experience, in the field of physical training, of other cities and countries will depend very largely upon the character of the support given to the department of physical training in the Boston Normal School. This school is conspicuous, in its class, by reason of the fact that its managers have taken measures to provide its pupils with theoretical and practical instruction in Swedish school-gymnastics, which measures have been cheerfully seconded hitherto by the School Committee. But the department is still in embryo, and its expansion and efficiency have been hampered by the crowded state of the curriculum and the insufficient resources of the school. Provision has been made, however, in framing the new course of study for the Normal School, for better instruction in gymnastics than was formerly practicable. Gymnastics has been placed in the list of electives, and twelve members of the class of 1893–94 availed themselves of the opportunity to elect it as a special study. Experience shows that the corridors of the Normal School are a poor substitute for a well-fitted

gymnasium. It is wisely proposed to include such a gymnasium in the projected extension of the Normal School building. At the suggestion of the head-master of the school, I have prepared sketch-plans for such a gymnasium. If a well-equipped gymnasium be provided it will add greatly to the usefulness and efficiency of this department, especially if the recently authorized experiment in developing departmental teaching in the grammar schools shall prove a success, and lead to a new departure in the management of those schools.

Grateful and emphatic acknowledgment should be made here of the good will and kindness shown by the Boston Normal School of Gymnastics (established by the late Mrs. Hemenway, whose munificent generosity in so many directions has made the Boston schools her permanent debtor) in allowing the special students of gymnastics in the Boston Normal School to make free and frequent use of its well-appointed gymnastic apparatus.

At the invitation of Dr. Dunton, the Principal of the Normal School, and with the consent of the Committee on Hygiene and Physical Training, I have helped to frame the elective course of study in gymnastics, already alluded to, and have taken part in the instruction given in accordance with it. Since the beginning of February, 1894, I have given seventeen lectures to those members of the senior class of the Normal School who elected gymnastics. The following list of topics will serve to indicate the purpose and character of the lectures: The Modern Doctrine of the Human Body; School Hygiene; The Physiology of Nerve and Muscle, and its Bearing upon the Education of Children and Adolescents; The Nature and Effects of Physical Training; Comparative View of the Principal Systems of Physical Training; Practical Hints on Teaching School Gymnastics.

The reference library of the Normal School has been im-

proved by the addition of a few modern works on anatomy, physiology, and hygiene. The school is sadly in need of preparations, models, etc., for purposes of demonstration and illustration. It is a pity, to say the least, that the pupils of our Normal School should be obliged to waste time, as they are at present, in studying the *elementary facts* of anatomy, physiology, and hygiene, when they might be prepared, on leaving the high school, for the profitable study of the practical application of the *principles* of those sciences to education and school-life, if the high-school course in the biological sciences were properly coördinated and conducted.

Acting under the direction of Superintendent Seaver, and the requirements of the committee charged with preparing the Boston exhibit for the Columbian Exposition at Chicago, I undertook the preparation of a series of photographs to illustrate the most distinctive features of the Swedish gymnastics as practised in our schools. In this, as in other branches of the work of this department, Mr. H. Nissen, Assistant Instructor in Physical Training, rendered valuable assistance. Owing to the inherent difficulty of securing satisfactory photographs of school-classes engaged in gymnastic exercises, the undertaking proved unusually tedious and time-consuming. However, a series of over one hundred views (embracing typical, alphabetic positions, a series of positions illustrating the principle of progression and the composition of the "Day's Order," together with views representing class-work in all the grades) was secured. The exhibit, which proved to be one of the features of the Boston exhibit, was not approached by any exhibit of a similar nature made by any American city. I may add that this exhibit was warmly commended by Prof. L. M. Törngren, who represented the Royal Central Gymnastic Institute in Stockholm (of which he is the director), at Chicago, and by the official representatives of the Prussian Ministry of Education.

During his stay in Boston, in June, 1893, Professor Törngren inspected the gymnastic exercises in many of our schools, and took occasion, both in public and in private, to express his high appreciation of the genuineness and excellence of instruction given by the class-teachers in Swedish gymnastics. Commendation by so eminent an authority was especially welcome and gratifying.

Considerable progress has been made in the past two years towards unifying and simplifying the practice of gymnastics in the classes as regards the times set for exercise, the amount of time devoted to instruction and practice, and the number and selection of the "Day's Orders" attempted. There is now much less diversity in these matters than obtained at first. Having, by periodical circulars of inquiry, practically determined what may fairly be expected and exacted of the several classes, I propose to promulgate a provisional course in gymnastics for the guidance of the teachers during the ensuing year, or so long as it may be found to work well. The drawing up of a uniform scheme of requirements and procedure has been materially facilitated by the School Committee's new rule with regard to recess; by the requirement of the Committee on Hygiene and Physical Training that sixteen consecutive minutes (which is the full time allowed by the amended course of study for the grammar schools) shall be devoted to gymnastics in all classes of the grammar grade at or about the middle of each afternoon session; and by the adoption of Nissen's "A B C in Swedish Educational Gymnastics," as a supplementary desk-book of reference.

In January, 1891, as appears from a statistical inquiry made at the time, only 79.2 per cent. of the grammar and primary school teachers professed to teach Swedish gymnastics in 1,065 classes, while 20.7 per cent. taught "mixed" forms of gymnastics. In January, 1893, mixed gymnastics had practically disappeared, and 1,098 teachers

were returned as teachers of the required Swedish gymnastics.

The following table affords a comparative view of the results of each inspection and rating of the 55 grammar schools, by schools and divisions. The epithets "excellent," "good," etc., are based on the average mark of the school, which is obtained by dividing the sum of the division-marks by the number of the division-marks. Each division-mark is also an average of marks touching five distinct particulars, viz., position, steadiness, precision, correctness, commands.

TABLE XX.

SHOWING COMPARATIVE RATING OF THE FIFTY-FIVE GRAMMAR SCHOOLS, IN PHYSICAL TRAINING, 1891-1894.

By Schools.

	First Inspection in 1891.		Second Inspection in 1891.		Third Inspection in 1892.		Fourth Inspection in 1893.		Fifth Inspection in 1894.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Old Scale.										
Excellent, 1.00-2.00	8	14.5	8	14.5	39	70.9	53	96.3	54	98.1
Good, 2.01-2.50	18	32.7	20	36.3	16	29.0	2	3.6	1	1.8
Passable, 2.51-3.00	17	30.9	20	36.3	0	.....	0			
Poor, 3.01-6.00	12	21.8	7	12.7	0	.....	0			
	55		55		55		55		55	
Present Scale.										
Excellent, 1.00-1.50	.....	.....	.....	.....	5	9.0	15	27.2	20	36.3
Very Good, 1.51-1.85	.....	.....	.....	.....	19	34.5	31	56.4	25	45.4
Good, 1.86-2.20	.....	.....	.....	.....	24	43.6	9	16.3	10	18.1
Passable, 2.21-3.00	.....	.....	.....	.....	7	12.7	0	.....	0	
Poor, 3.01-6.00	.....	.....	.....	.....	0	.....	0	.....	0	
					55		55		55	

By Divisions.											
Old Scale.											
Excellent,	1.00–2.00			342	61.5	466	83.2	490	85.7		
Good,	2.01–2.50			179	32.0	85	15.1	75	12.8		
Passable,	2.51–3.00			29	5.2	6	1.07	6	1.0		
Poor,	3.01–6.00			6	1.7	3	0.53	2	0.3		
				556		560		582			
Present Scale.											
Excellent,	1.00–1.50			104	18.7	217	38.9	260	44.6		
Very good,	1.51–1.85			150	26.9	145	26.2	169	29.0		
Good,	1.86–2.20			186	33.4	163	29.1	120	20.6		
Passable,	2.21–3.00			110	19.7	30	5.3	30	5.1		
Poor,	3.01–6.00			6	1.0	2	0.3	3	0.5		
				556		560		582			

In 1892 the average school-mark was 2.05, and 42 schools were rated above the average and 13 below. The average mark was 1.65 in 1893, when 27 schools were rated above and 28 below the average, all 55 schools being above the average of 1892. In 1894 the average school-mark was 1.60, which mark was exceeded in the case of 26 schools, and unattained by 29 schools. In 1894 31 schools were rated above the average for 1893 and 54 above the average for 1892; while 24 schools were rated below the average for 1893 and 1 below the average for 1892. These results warrant the conclusion there has been marked improvement in gymnastic instruction in the grammar schools during the last two years. The progress made in the primary schools, though less marked for obvious reasons, has been fairly satisfactory.

In closing this report I append as pertinent in this connection, the following extract from the report of Superintendent Philbrick made to the School Committee in 1872. Having noted the changes whereby the average physical condition of the pupils in the schools, during the previous twelve years, had been improved, Mr. Philbrick declares that he is "bound to say, and to say with emphasis, that there is still great room for improvement in physical culture. *We ought to aim, not merely* TO AVOID INJURING *the health of pupils while carrying on their instruction in our schools, but* TO INCREASE *their physical health, strength, and beauty.* . . . You may say that the exigencies of modern society demand some sacrifice of physical health and strength to intellectual attainments. For one I deny the soundness of this doctrine altogether. Complete physical health and development is essential to the truest and best intellectual results of education. . . . All we have done in the interest of school hygiene during the past twelve years is far, very far, from being what we can safely accept as a satisfactory finality. It is, in truth,

only a *beginning* of the vast work yet to be accomplished, if we mean to make our system of education a complete success."

All of which is respectfully submitted,

EDWARD MUSSEY HARTWELL,
Director of Physical Training.

JUNE, 1894.

SCHOOL DOCUMENT NO. 9 — 1894.

REPORT AND CATALOGUE

OF THE

)STON NORMAL SCHOOL

FOR THE YEARS

1893-94.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

REPORT OF THE HEAD-MASTER.

To the Committee on the Normal School:

In accordance with the Regulations of the School Committee, I have the honor of submitting the following report:

PURPOSE OF THE SCHOOL.

The end for which the Boston Normal School is maintained is to prepare teachers for the public schools of the city. It takes its pupils mainly from the graduates of the Boston High Schools. The course of professional instruction in the school covers a period of two years. During this time the end for which the school is supported is constantly kept in mind, and the work of the pupils is directed, in all their studies, with reference to the attainment of this end.

A teacher should have a thorough knowledge of the science of education, practical skill in instruction and discipline, broad scholarship, and a high ideal of life. This school strives to create teachers with all these characteristics.

SCIENCE OF EDUCATION.

The subject-matter of the science of education is the activities of the child, designed to change him from what he is at the beginning of the process to what he should be at the end. The teachers of this school endeavor to bear in mind every day the fact that education, in the best sense of the term, consists of what the child does and not in what is done for him.

In unfolding the science of education we endeavor to bring

our pupils to a clear understanding of five things: 1. The aim of education. This is a being with all needed knowledge, power, and habits that will qualify him for the greatest amount of usefulness to his fellow-men and the largest amount of personal happiness. What the special knowledge, power, and habits are which should be created in the child, must be determined partly from the civilization of the nation in which the child is to live, and partly from the nature of the child himself. While a child should be trained to participate in all the life which constitutes the highest civilization of the age, he can be transformed into nothing but a man.

2. The process. In order that our pupils may understand the true nature of the educational process in the child, they must know the end of education, the possible activities of the child, the order in which these activities must be called out, and the great laws of self-activity in the attainment of knowledge, power, and habit. To this end much attention is given to the subjects of physiology, school hygiene, and gymnastics on the one hand, and to psychology, ethics, and logic on the other. The study of both body and mind is continued from the beginning of the course to its close. The study of the body begins with a review and extension of the pupil's knowledge of physiology, and ends with a careful examination of the physiological laws which control a rational practice of gymnastics. The study of mind begins with a thorough course of psychology, and ends with a careful investigation of the principles which lie at the basis of all true teaching and discipline and their application to the work of the school.

3. The agents. We try to make it clear that there are at least five educational forces constantly acting upon pupils, — the family, civil society, the State, the church, and the school. In this way we make it evident that the school is merely the assistant of the four fundamental institutions of civilization, and is consequently not responsible for all the

defects even in educated human nature. From this standpoint it is possible to obtain a clear insight into the true function of the public school.

4. The means. Considering education as a series of actions performed by the child, and the business of the teacher as the stimulation of the child to proper action in school, it becomes important to give our students a complete knowledge of the proper means by which to cause in the child the right actions and in the right order. Hence we distinguish carefully between the function of things and that of words, as educational means. While little progress in education can be made without language, the real source of all elementary ideas, the beginnings of all branches of knowledge, lie back of language and in things. The relation of true object teaching to the pupil's subsequent progress thus becomes apparent.

5. Methods. The study of the science of education is not completed till the teacher knows the true method to be followed, in the use of educational means, by the various classes of educators, so as to cause those activities of the pupils which will secure the true end of education. The educational process as a whole, as well as the learning of any branch of study, has a beginning, a middle, and an end. There is some course of procedure that is better than any other. The method of teaching any subject is simply the true order of progress. This order in teaching any subject in school is determined by the nature of the child as related to the nature of the subject. A large amount of time is given in the Normal School to an attempt to master the laws of mental action which determine this order, so as to bring our pupils to the point where, by a sufficient amount of exact thinking, they can themselves discover true methods of teaching.

SKILL IN TEACHING.

While we are giving our pupils a knowledge of the science of education, we endeavor to develop in them a fair degree of skill in teaching and governing children. For this purpose they spend sixteen weeks of the course in observation and practice in the public schools, four weeks during the second term, eight weeks the third term, and four weeks the last term. In addition to this, they see a good deal of teaching in the Training School, and have much practice in preparing lessons under criticism and in presenting lessons from the teacher's standpoint to their classmates.

SCHOLARSHIP.

But the influence of our school does not end with professional knowledge and skill. It contributes in no small degree to the real scholarship and the culture of its students. The incidental effect of reducing the process of learning each department of arithmetic to its elements, and of arranging those elements in the logical order of their dependence, so that the mastery of the science of arithmetic is seen as a series of continually dependent mental acts adapted to the intellectual nature of the child, — all this is to give a new and profounder insight into the science itself. When the subject of geography has been treated in a similar manner, so that the Normal students are able to trace the elementary forces of light and heat through the formation of mountains and valleys, oceans and rivers, climate and soil, flora and fauna, human life and human industries, physical and mental development, and civilization itself, geography is to them a new science. And so it is with every elementary subject of study taken up in the Normal School.

Then, too, the mastery of the science of the human soul, of the laws of thought, of the theory of language, of the philosophy of a complex system of exercise designed to de-

velop the body and promote health, and of the profound and difficult science of education, — all this, to say nothing of the history of educational men and movements, and of the relation of astronomy to the science of geography, and of the various other subjects mastered in the Normal School, — all this, I say, is no small part of a liberal education.

INSPIRATION.

Then there is still another result of the course of study pursued in our school, of hardly less importance than either of the others. I refer to its broadening and elevating effect upon the ideals of human life and human duty, and the inspiration to noble living that this view produces. All the work of the Normal School is performed with reference to the uplifting, physically, intellectually, and morally, of those for whom we are to labor. The possibilities of making them better is constantly kept before the minds of the students. Children become to our pupils something sacred. Their rights are to be regarded. Help is ever to be extended. Teaching becomes a high and holy calling. And along with the lofty ideal arises in the hearts of our students a consuming zeal for the work of teaching. They enter upon the work of their profession in a spirit of humility and often self-distrust, but with a burning desire to make the most of themselves and of their pupils. Nowhere else is a true professional spirit so quickly aroused.

CHANGE IN THE COURSE OF STUDY.

The present class, that of 1894, is the first that has enjoyed the advantages of the two years' course of study. They have had two weeks' additional practice in teaching, and eighteen additional weeks of the theoretical and practical study of their profession. This has enabled them to study

some phases of professional work more thoroughly than preceding classes have been able to do.

A special feature of the work of this class has been the optional courses authorized by the committee last year. I have been successful beyond my hopes in organizing classes in these special courses.

The kindergarten class has been continued under the same general direction as heretofore. In this department we graduate a class of twelve. We are indebted to Miss Sally Fairchild for gratuitous assistance in teaching physical exercises, and the songs and games in this department during the year.

All the class, except those who took the course in the Theory and Practice of the Kindergarten, were required to elect one of the other authorized optional courses for the fourth term, and to devote to it ten hours a week, five of study and five of recitation. The election of courses was as follows: Gymnastics, 11; Elementary Science, 13; Manual Training, 5; Form, Color, and Drawing, 13; Music, 14; Cooking, 1; Sewing, 2. Instruction has been given in all these departments except cooking.

OUTSIDE HELP.

We have been greatly helped in the work in gymnastics by friends outside the school. The director of gymnastics has given a lecture once a week, for the purpose of opening up to the pupils the value of gymnastics and its relation to other kinds of school work. To the Natural History Society we are indebted for the use of microscopes, an invaluable aid to scientific work. The Massachusetts Institute of Technology has supplied both microscopes and material for study along physiological lines.

The practical work in gymnastics could not have been successfully carried out, owing to our lack of a gymnasium, but

for the kindness of the director of the Boston Normal School of Gymnastics. The well-equipped gymnasium of that institution has been put at the disposal of our special students of gymnastics four times a week. By this means a personal and professional work has been done which otherwise must have been omitted.

Much of the success of the course in Elementary Science has also been due to the liberality of its friends. Since the school itself possesses no laboratory, no microscopes, and few books other than the elementary text-books, the problem of how it should give to special students adequate preparation for teaching seemed very serious.

Recognizing our needs, the Society of Natural History offered us the free use of their collections, their laboratory, — including a compound microscope for each student,— besides instruction from well-known specialists in Zöology and Geology. A unique, valuable, and thoroughly enjoyable phase of this work has been the study of Nature outdoors, under the guidance of able professors.

To the Biological Department of the Institute of Technology, the school is also deeply indebted. They, too, have generously given the use of microscopes, access to their library, and a large measure of their time.

BETTER ACCOMMODATIONS.

Our need for increased accommodations grows more urgent year by year. We need a gymnasium, a room for manual training, a physical laboratory, a room for drawing, one for the class in kindergartening, a laboratory for elementary science, and several additional recitation rooms. Our work is hindered and its quality impaired for lack of proper facilities. When it is remembered that the quality of the instruction given in all the schools of Boston depends upon the work in the Normal School, it must be obvious that all

needed means for doing our work in the best manner should be provided. To pinch here is to cripple the whole school system and to injure every child in the city of Boston. It cannot be that the City Council realize the needs of this school, and its relation to the education of all our children.

TRAINING TEACHERS.

A part of the required work of our pupils, during their course in the Normal School, is sixteen weeks of observation and practice in the public schools. This part of the work is as important as any other part. Indeed, it is absolutely necessary, if the theory of education which our pupils learn is to be brought into such close relation to the practice of teaching that it can be applied at once, when they leave our school, without further blundering experimentation. Hence this work should be done under the most favorable conditions.

Such conditions do not now exist. Our pupils are often sent to those teachers who have no especial fitness for the duties of training teachers. A woman, to be a good training teacher, needs to be a good instructor and disciplinarian, an educational philosopher, and an enthusiast. She must be a model teacher, she must be able to guide the Normal pupil in the preparation of her lessons, to criticise her work, and inspire her with a love of teaching. The present plan of employing training teachers fails in many cases to secure these qualifications.

Is it reasonable to expect a woman who has made herself fit for this important service to enter upon it with enthusiasm, knowing that it brings added care and responsibility, but no additional compensation? Is not the present plan of securing this service of the nature of fining for being superior? Teachers are asked to do this extra work simply because they are better qualified than others, and to do it

without pay. The result is that many decline outright, and many others give their service grudgingly. Occasionally we find a teacher with a wise head and warm heart, who is willing to put her best self into the work for the sake of the good that she can do. But, in the long run, it is unwise to depend exclusively upon the missionary spirit. We should be able to command the best talent and to make it available year after year.

To this end I earnestly recommend that a moderate compensation be offered for the extra service of the training teachers, and that their yearly selection be left to the superintendent and the head-master of the Normal School. If this is done, the value of the sixteen weeks of observation and practice by the Normal students will be more than doubled; for we shall have for training teachers a set of able experts devoted to their duties and in sympathy with the ends and aims of the Normal School. This is, in my opinion, the most imperative reform needed in the school.

LARKIN DUNTON.

CATALOGUE

OF THE

BOSTON NORMAL SCHOOL

FOR THE YEARS

1893-94.

SCHOOL COMMITTEE.

1894.

Term expires January, 1895.

Samuel H. Calderwood,	Walter G. Page,
Simon Davis,	Laliah B. Pingree,
Richard C. Humphreys,	Solomon Schindler,
Ernest C. Marshall,	Thomas F. Strange.

Term expires January, 1896.

Willard S. Allen,	Isaac F. Paul,
William T. Eaton,	Fred. G. Pettigrove,
Caroline E. Hastings,	Benjamin B. Whittemore,
Elizabeth C. Keller,	J. P. C. Winship.

Term expires January, 1897.

Alfred Blanchard,	Henry D. Huggan,
Edward H. Dunn,	James A. McDonald,
Emily A. Fifield,	S. Albert Wetmore,
George R. Fowler,	Samuel H. Wise.

COMMITTEE ON THE NORMAL SCHOOL.

J. P. C. Winship, *Chairman.*
Mrs. Emily A. Fifield, *Secretary.*
Miss Laliah B. Pingree,
Thomas F. Strange,
George R. Fowler.

BOSTON NORMAL SCHOOL.

LARKIN DUNTON, *Head-Master*, 16 Ashford St., Allston, Mass.
WALLACE C. BOYDEN, *Sub-Master.*
L. THERESA MOSES, *First Assistant.*
KATHERINE H. SHUTE, *First Assistant.*
DORA WILLIAMS, *Second Assistant.*
LAURA S. PLUMMER, *Second Assistant.*
ALMIRA I. WILSON, *Second Assistant.*
FANNY E. COE, *Second Assistant.*
ALICE M. DICKEY, *Second Assistant.*
LAURA FISHER, *Teacher of Kindergartening.*
MARY H. WATERMAN, *Asst. Teacher of Kindergartening.*
HOSEA E. HOLT, *Teacher of Music.*
HENRY W. POOR, *Teacher of Drawing.*
HENRY HITCHINGS, *Director of Drawing.*

RICE TRAINING SCHOOL.

LINCOLN OWEN, *Principal.*

GRAMMAR DEPARTMENT.

CHARLES F. KIMBALL, *Sub-Master.*
JOSEPH L. CAVERLY, *Sub-Master.*
FLORENCE MARSHALL, *First Assistant.*

Second Assistants.

DORA BROWN,
LOTTA A. CLARK,
MIRIAM W. DIKE,
ELLA T. GOULD,
MARGARET A. LEAHY,
M. ELIZABETH MAILMAN.

Third Assistants.

ELIZA COX,
MATTIE H. JACKSON.

PRIMARY DEPARTMENT.

GERTRUDE E. BIGELOW, *First Assistant.*

Second Assistants.

MABEL I. EMERSON,
ELEANOR F. LANG,
ALICE M. MAY,
MARY C. MELLYN.

Third Assistants.

SARAH E. BOWERS,
CLARA C. DUNN,
EMMA L. WYMAN.

KINDERGARTEN DEPARTMENT.

MARY H. WATERMAN, *Principal.*
ELIZABETH C. BARRY, *Assist.* ALICE L. MCLAUTHLIN, *Assist.*

REGULATIONS OF THE BOSTON NORMAL SCHOOL.

ADOPTED BY THE SCHOOL BOARD.

SECTION 295. The Boston Normal School is established for the purpose of giving professional instruction to young women who intend to become teachers in the public schools of Boston. The course of study in this school shall be for two years, and shall be divided into four terms of half a year each.

SECT. 99. The instructors of this school shall be a head-master, a sub-master, and first and second assistants. The head-master shall be a graduate of a college in good standing. He shall have a sub-master, two first assistants, and as many second assistants as may be necessary, provided the whole number of teachers, exclusive of the head-master and sub-master, shall not exceed one for every twenty-five pupils. An additional instructor may be elected for an excess of twenty pupils, and one may be removed for a deficiency of twenty. In addition to the instructors already provided for in this section, there shall be a second assistant as teacher of gymnastics, a teacher of the theory and practice of the kindergarten, an assistant teacher of the theory and practice of the kindergarten, who shall serve as principal of the training school kindergarten, and a special teacher of drawing.

SECT. 117. The Committee on Nominations in presenting the nomination of teachers on probation shall determine the year of service in accordance with the following: A teacher nominated on probation (whether in case of a new teacher, or of one who has retired from the service and afterwards reënters it, or of one who is promoted in rank) shall receive one year's credit for more than two and less than four years' previous service; two years' credit for more than four and less than six years' previous service; three years' credit for more than six and less than seven years' previous service; four years' credit for more than seven and less than eight years' previous service; five years' credit for more than eight years' previous service: *provided*, that a teacher nominated on probation, who has previously served as temporary teacher or substitute, shall receive one year's credit for every full year of continuous service, and where such service has not been continu-

ous, he shall receive one year's credit for every three years of such service. The salary of no teacher transferred to a higher rank or grade of schools shall be reduced.

SECT. 120. The salaries of sub-master and first and second assistants shall be established at a minimum rate for the first year of service, with an annual increase during the succeeding five years, so that the maximum salary shall be reached for the sixth and each subsequent year of service. The salary of the teacher of theory and practice of the Kindergarten shall be established at a minimum rate for the first year of service, with an annual increase during the succeeding three years, so that a maximum rate shall be reached for the fourth and each subsequent year of service. The salary of the assistant teacher of the theory and practice of the Kindergarten shall be the same as that of a second assistant in the Normal School. The salaries of assistants in the Training School Kindergarten shall be the same as those of assistants in the other Kindergartens.

SECT. 213. The sessions of the Normal, Latin, and High Schools shall begin at nine o'clock A.M., and close at two o'clock P.M., every week-day except Saturday, when there shall be no session.

SECT. 296. Candidates for admission must be at least eighteen years of age, unless an exception is made by a special vote of the committee in charge, and must be recommended for admission by the master or committee of the last school they attended. Those who have completed the fourth year of the High School course, and those who shall have received from a university or college, which shall be approved by the Board of Supervisors conjointly with the head-master, a degree or certificate of graduation, will be admitted without examination. Other candidates must show to the Board of Supervisors conjointly with the head-master, both by examination and recommendation, that they are qualified. Pupils shall be admitted to this school, for the regular and special courses, only at the beginning of a school year. All pupils shall be put on probation, and as soon as, in the opinion of the Board of Supervisors and the head-master, they prove unsuitable for this school, shall be discharged by the committee on the school, if they deem proper.

SECT. 297. The Board of Supervisors, conjointly with the head-master, shall examine the pupils in the Normal School, make promotions from class to class, and, at the close of the course, submit the results of their examinations and the rank of the pupils, together with their own recommendations, to the Committee on Examinations, who shall award the diplomas. Questions for the diploma examinations in the Normal School shall be adopted by the Board of Supervisors, and approved by the Committee on Examinations. Pupils who fail of promotion or graduation may join the following class; but no pupil shall repeat the work of any class more than once.

SECT. 298. A diploma of graduation from the Normal School, issued after the year 1872, shall entitle the holder to receive a certificate of qualification, Grammar School, Class B; but those who take the Kindergarten course during the second year shall be entitled to receive certificates of qualification as teachers of the Kindergartens and Primary Schools only. When teachers are to be employed in the public schools, graduates of this school shall have the preference, other things being equal.

SECT. 300. This school shall begin on the Thursday following the first Wednesday in September, and shall close on such day of the week preceding the Fourth of July as the Committee on the School may direct.

SECT. 301. The head-master shall annually make a report to the committee in charge, which, under their direction, shall, in whole or in part, be printed, with a catalogue of the school, and be sent to the members of the School Committee and of the Board of Supervisors, the principals of the schools, and the members of the graduating classes of High Schools.

SECT. 302. When a graduate of this school is appointed as teacher in any public school of this city it shall be the duty of the head-master to make, or cause to be made by his assistants, one or more visits to her school, for the purpose of criticism and suggestion in regard to her teaching.

SECT. 303. Such instruction shall be given, in connection with the Normal School, to teachers in the employ of the city as the committee in charge may direct. Special instruction in music and

drawing shall be given in this school under the direction of the committees on these departments.

SECT. 304. The Board of Supervisors shall, in the month of September of each year, designate a sufficient number of the teachers in the public schools — the number to be not less than fifty — to act as training teachers. The head-master shall send the Normal pupils into the Training School and into the rooms of the other training teachers for observation and practice in teaching, under his direction, four weeks during the second term, eight weeks during the third term, and four weeks during the fourth term; and he may send them, under proper guidance, to study the Museums of Natural History and Fine Arts, and important manufacturing industries. The principals of schools in which the Normal pupils observe and practise shall report to the head-master, in writing, their opinion of the teaching and governing ability of such pupils. Pupils who take the Kindergarten course shall be required to observe and practise in Grammar and Primary Schools only eight weeks. Other needed observation shall be made in the Kindergartens.

SECT. 305. There shall be a post-graduate course of one year in this school, for the further study of the principles of education and methods of instruction, and for observation and practice in teaching; and pupils attending this course may be employed as substitutes or temporary teachers, or appointed as permanent teachers. Regular instruction shall be provided for the pupils of the post-graduate class for one term only; but they may attend the instruction given in the other classes for the rest of the year.

SECT. 306. The course of study in this school is pursued with special reference to teaching, and is as follows:

1. Psychology and Logic.
2. Principles of Education.
3. History of Education.
4. General Theory of the Kindergarten.
5. Methods of Instruction and Discipline.
6. Physiology and Hygiene.
7. The Studies of the Primary and Grammar Schools.
8. Observation and Practice in the Public Schools.

9. Science of Language.
10. Phonics.
11. Gymnastics.
12. Vocal Music.
13. Drawing and Blackboard Illustration.
14. Optional courses designed for the special preparation of teachers in the following departments: (*a*) The Kindergarten; (*b*) Elementary Science; (*c*) Gymnastics; (*d*) Form, Color, and Drawing; (*e*) Vocal Music; (*f*) Cooking; (*g*) Sewing; (*h*) Manual Training. Pupils, with the advice and consent of the head-master, may pursue any one of the optional courses during the second year.

TRAINING DEPARTMENT.

SECT. 307. The Rice Training School is intended to give the pupils of the Normal School a practical knowledge of the methods of instruction and discipline in the public schools of Boston.

SECT. 99. The instructors in the Training School shall be a master, two sub-masters, two first assistants, and as many second and third assistants as may be necessary, — the committee in charge to determine the number of second and third assistants, — provided that the whole number of instructors, exclusive of the master, shall not exceed one for every forty-nine pupils. An additional instructor may be elected for an excess of twenty-five pupils, and one may be removed for a deficiency of twenty-five. An additional instructor, with the rank of second or third assistant, as the committee in charge shall determine, may be elected for an ungraded class.

The Training School Kindergarten shall be allowed one assistant, exclusive of the principal, for every twenty-five in attendance.

SECT. 308. The Committee on the Normal School shall have charge of the Training School.

SECT. 309. The head-master of the Normal School shall have the direction of the observation, practice, and methods of instruction in the Training School, subject to the approval of the committee in charge.

SECT. 310. The principal of the Training School shall perform,

in that school, the usual duties of master of a grammar school, and such duties in connection with the Normal School as the committee in charge may direct.

SECT. 311. The course of study in the Training School shall be the same as in the grammar and primary schools of the city.

SECT. 312. The instructors in the Normal School shall perform such service in the Training School as the head-master may direct.

SECT. 313. The Committee on the Normal School shall have charge of the Training School Kindergarten.

LOCATION.

The Normal School occupies the upper floor and part of the second floor of the school-house at the corner of Dartmouth and Appleton streets. The Training School, consisting of eleven grammar classes, eight primary classes, and one kindergarten, numbering in all about a thousand pupils, occupies the remainder of this building, and also the Primary School-house on Appleton street.

EXAMINATION FOR ADMISSION.

The course of study in the Boston High Schools embraces the following subjects: English Language and Literature; Ancient Mediæval, and Modern History; Civil Government; Botany; Zoölogy; Physiology and Hygiene; Chemistry; Physics; Astronomy; Algebra; Geometry; Plane Trigonometry; Latin, or French, or German; Vocal Music; and Drawing. Candidates who have not completed the fourth year of the Boston High School course, or who have not received a degree or certificate of graduation from an approved college or university, will be examined on this or its equivalent. An examination of such candidates will be held at the school-house, on Dartmouth street, the Tuesday preceding the first Wednesday in September, at 9 o'clock A.M. Those who have completed the fourth year of the Boston High School course will present themselves with their diplomas on the following Thursday.

TUITION.

The rule of the School Board in regard to the payment of tuition by non-resident pupils, applicable to the Normal School as well as the other public schools of the city, is as follows:

"All children living in the city, who are upwards of five years of age, and are not disqualified by non-compliance with the regulations of the Board, shall be entitled to attend the public schools; but neither a non-resident pupil, nor one who has only a temporary residence in the city, shall be allowed to enter or to remain in any school, unless the parent, guardian, or some other responsible person has signed an agreement to pay the tuition of such scholar, or until a certified copy of a vote of the Committee on Accounts, permitting such scholar to attend the school, has been transmitted to the principal." The tuition is usually about seventy-five dollars a year.

NECESSITY FOR ATTENDANCE.

The following extracts from the Regulations of the Public Schools of the City of Boston will show the relation of the Normal School to the work of teaching in Boston:

"The Board of Supervisors shall not admit to an examination [of applicants for situations as teachers] any person who is not a graduate of the Boston Normal School or of one of the State Normal Schools, unless such person has had at least one year's experience in teaching school."

"The Board of Supervisors shall grant certificates of qualification after examination to such candidates as they shall consider entitled to them, as follows:

"*High School, Class A.* To head-masters, masters, and junior-masters of the Normal and High Schools, and principals of Evening High Schools.

"*High School, Class B.* To assistant principals and assistants of the Normal and High Schools.

"*Grammar School, Class A.* To masters and sub-masters of Grammar Schools, principals of Evening Elementary Schools, and assistants of Evening High Schools.

"*Grammar School, Class B.* To assistants of Grammar, Primary, and Evening Elementary Schools.

"*Kindergartens.* To instructors of Kindergartens.

"*Special.* To instructors of special studies and of special schools.

"The certificate shall make the holder thereof eligible for service as a substitute, temporary teacher, or special assistant, or for appointment on probation.

"No instructor shall be employed in any higher grade of schools than that for which the certificates shall qualify the holder thereof; and no instructor whose certificate is not recorded in the office of the Committee on Accounts shall be entitled to draw any salary as a teacher or as a substitute; and the Auditing Clerk shall not allow the name of any such teacher or substitute to be entered or to remain on the pay-rolls."

VACATIONS.

The following holidays and vacations are granted to the school, viz.: every Saturday; the first Monday in September; the half day before Thanksgiving day, and the remainder of the week; one week commencing with Christmas day; New Year's day; the twenty-second of February; Good-Friday; nineteenth of April; the week immediately preceding the second Monday in April; Decoration day; the seventeenth of June; and from the close of the school, the week preceding the fourth of July, to the Thursday following the first Wednesday in September.

TIME OF ADMISSION.

Only one class is admitted to this school during the year, and that is admitted at the beginning of the school year. Pupils are not received at other times. The work of the school is so conducted that it is impossible for pupils to make up lessons lost at the beginning of the term, so that it is necessary for all who desire to enter during the year to be present at the opening of the school in September.

The post-graduate class will be organized at 9 A.M. on the first Wednesday in September.

PROGRAMME.

The following table shows how the time of the students is now occupied during the course, and the notes following the table show what is attempted in each subject:

FIRST TERM.

Subjects.	No. of weeks.	Hours per week.	No. of lessons.
Psychology	20	5	100
Physiology and Hygiene	20	4	80
English:			
Oral Expression and Composition	8	3	24
Penmanship	4	3	12
Reading and Phonics	8	3	24
Geography	16	4	64
Elementary Science:			
Minerals	4	4	16
Drawing	20	2	40
Music	20	1	20
Gymnastics:			
Theory	20	1	20
Practice	12 minutes daily.		

SECOND TERM.

Subjects.	No. of weeks.	Hours per week.	No. of lessons.
Psychology	16	5	80
English:			
Reading and Phonics	4	4	16
Spelling	2	4	8
Literature	6	4	24
History	4	4	16
Arithmetic	16	4	64
Elementary Science:			
Plants	12	3	36
Theory of Kindergarten	4	3	12
Drawing	12	2	24
Form	4	2	8
Music	16	1	16
Gymnastics:			
Theory	61	1	16
Practice	12 minutes daily.		
Observation and Practice	All day, 4 weeks.		

THIRD TERM.

Subjects.	No. of weeks.	Hours per week.	No. of lessons.
Principles of Education	4	5	20
Logic	8	5	40
English:			
Oral Expression and Composition	8	2	16
Science of Language	4	4	16
Kindergarten Methods	8	2	16
Arithmetic	12	3	36
Elementary Science	8	4	32
Geography	4	4	16
Drawing	8	2	16
Color	4	2	8
Music	12	1	12
Gymnastics:			
Theory	12	1	12
Practice	12 minutes daily.		
Observation and Practice	All day, 8 weeks.		
Optional Course:			
Theory and Practice of the Kindergarten	The entire term.		

FOURTH TERM.

Subjects.	No. of weeks.	Hours per week.	No. of lessons.
Principles of Education	8	5	40
History of Education	8	5	40
Arithmetic	8	5	40
English:			
Reading	8	5	40
Grammar	8	4	32
Mathematical Geography	8	4	32
Gymnastics:			
Theory	16	1	16
Practice	12 minutes daily.		
Observation and Practice	All day, 4 weeks.		
Optional Course: 1. Gymnastics. 2. Elementary Science. 3. Manual Training. 4. Form, Color, and Drawing. 5. Music. 6. Cooking. 7. Sewing	16	5	80
8. Theory and Practice of the Kindergarten	The entire term.		

POST-GRADUATE COURSE.

The work of the post-graduate class includes:

1. General course.
   (1.) A further study of the principles of education, with special reference to their application in teaching the different subjects of the regular course, and in school discipline;
   (2.) The history of education.
2. Special course.
   Theory and Practice of the Kindergarten.

NOTES ON THE PROGRAMME.

Psychology.

The study of psychology is conducted both from the standpoint of introspection and that of observation. The students are led to know and name their own mental processes, and to interpret the signs of the mental processes of others. The study is not exhaustive, the attention being mainly directed to those phases of mental activity, a knowledge of which will be of most use in the study of the science of education.

Logic.

The aim of the study in this subject is to give the students a knowledge of its terms, to interest them in a further study of the subject, and to give them such a familiarity with the processes of reasoning as will enable them to direct the reasoning of their pupils with more exactness.

Principles of Education.

The study in this department is directed mainly to ascertaining those necessary sequences in different kinds of mental action, which will serve as guides to the teacher in directing the work of children. These sequences constitute the principles in accordance with which all sound educational processes must be conducted. Their application is shown by constant reference to proper methods of instruction and discipline.

History of Education.

The work on this subject is designed to make the pupils familiar with a few of the leading educational reforms and reformers of the past, and thus to bring them into sympathy with the spirit of modern education.

Physiology.

The purpose of the work in physiology and school hygiene is twofold: first, to give the Normal students a practical knowledge of the laws of health, based upon a knowledge of anatomy and physiology, in order that they may know the means of preserving their own health and that of the children whom they are to teach; second, to prepare them to give elementary instruction in physiology to pupils in primary and grammar schools.

Language.

The purpose of the work on the English language is to prepare the Normal students, first, to teach children to speak, read, and write their mother tongue with accuracy and facility; second, to awaken in them a love and appreciation of literature. In order to accomplish this object, the pupils are led to understand the principles which should guide them in the development of power in the departments of the work enumerated in the programme, and to apply these principles in giving illustrative lessons.

Arithmetic.

The course in arithmetic is intended to develop power in analyzing and arranging the subject-matter to be taught, and in discovering and applying methods adapted to its clear presentation. Each pupil is required to do this work of analysis, arrangement of the subject, and teaching of lessons to the class, under the direction and criticism of the teacher. The instruction covers the whole range of the subject, both elementary and advanced. Incidentally, the student's knowledge of arithmetic is made broader, clearer, and more accurate, although the chief purpose of the work is to show the application of the principles of teaching to this subject.

Geography.

The work in geography is designed to develop in the Normal pupils the ability to apply the principles of education to the teaching of this subject. They are taught to observe carefully the natural objects around them; they are taught to use the elements gained by direct observation in picturing scenes in distant lands; they are taught to reason from cause to effect in their observation of the phenomena of nature, and from their knowledge of their own surroundings to infer conditions in other places. Thus, by their own experience they learn the methods of directing the work of others.

History.

The purpose of the work in history is to equip pupils for teaching the subject. The work includes, first, a study of the nature of history, and the principles which should guide in teaching it; and, second, practice in giving illustrative lessons.

Elementary Science.

The main object in all the branches of elementary science is to give the pupils of the Normal School the power of so presenting each subject that the children will observe the various objects to be studied; will see their likenesses and differences so as to make simple classifications; and, through their knowledge of the relations of these various objects to each other, will see the unity and beauty of the world.

Drawing.

The following course of instruction in drawing, for the students in this school, has been prepared by the director of drawing, and is closely followed. The object of the course is twofold: first, to prepare the students to teach all the branches of this subject that are studied in the primary and grammar schools; and, second, to give them the power

to illustrate any subject that may need illustration, with sketches made upon the blackboard with chalk.

DRAWING PROGRAMME FOR THE NORMAL SCHOOL.

The instruction in this subject is to be largely "normal." The students are required to make copious notes and illustrate them with sketches. The course of instruction should be presented in the order of its arrangement as given below, and the amount of time given to each subject should be also governed by this programme.

Geometric Drawing. — Time, 4 hours.

The instruction includes the best methods of presenting this subject, both in its relation to the other departments of drawing, and as a separate study: (1) How to handle compasses, straight-edges, pencils, etc.; (2) The selection of problems useful to scholars; and (3) The systems of notation used, and the reason why it should be insisted upon.

Historic Ornament. — Time, 10 hours.

Here the students are taught the methods of studying this subject from illustrations (to be made by the teacher) of three or more schools of ornament, and the use of these illustrations for observation lessons introductory to the subjects of decoration, and the technique of elementary design.

Geometric Decoration. — Time, 8 hours.

The methods of construction to be used in decorations of this kind are: (1) Those purely geometric; (2) Those based on the great law of growth in plants.

Elementary Design. — Time, 12 hours.

Here are taught the principles of decoration, which are based upon the laws of growth in plants, and their application to the various kinds of decoration: (1) Horizontal radiation, or repetition around a point or central stem; (2) Vertical radiation, or growth from a point or central root; (3) Vertical growth, opposite or alternate, from an upright line or stem; (4) Growth or movement of trailing or climbing plants, both on vertical and horizontal surfaces.

The following ground is to be covered: natural or pictorial treatment contrasted with conventional treatment; the reasons why the latter should be used in decoration; the treatment of stems and the number of planes to be suggested in elementary design; geometric construction and division of surfaces to be decorated; construction of the decoration,

which must be based upon the laws of growth; conventionalization — repetition, alternation, symmetry, balance, harmony, variety, unity.

Constructive or Working Drawing. — Time, 10 hours.

The study of this subject includes: (1) How to make freehand working drawings from geometric solids, and from common objects; (2) How to make working drawings from geometric solids and from common objects by the use of instruments; (3) How to figure the dimensions on all working drawings.

Model and Object Drawing, and Practical Perspective. — Time, 18 hours.

This branch of instruction includes observation, study, and drawing from: (1) Type solids or models; (2) Natural objects; (3) Manufactured objects. The models and objects are presented in the order above named. Beginning with the types they are first presented singly, then in groups, and lastly, in various combinations or arrangements made up from type solids, natural and manufactured objects.

Here is also taught the best method of accurate representation in model and object drawing, and the use of diagonals and diameters in finding the actual or apparent position of points.

Illustrative Drawing. — Time, 20 hours.

This work includes methods and practice in drawing illustrations upon the blackboard in connection with the teaching of various subjects, such as geography, plants, animals, etc.

Form.

The principal object in the study of form is to prepare the students to teach modelling in clay, paper-folding, etc., so as to lay the foundation for drawing as based upon the observation of the form to be drawn.

Color.

In this department the Normal pupils are qualified to direct the observation of children so as to give them the knowledge of common colors, together with their most important harmonies and contrasts.

Vocal Music.

In this department it is the aim to qualify the students to direct children in the study, first, of musical sounds themselves; and, secondly, of the proper mode of representing music. Music itself is made the chief object of study, the study of signs being confined to those needed to express the child's knowledge of the music.

Gymnastics.

This course secures for every pupil in the school: (1) a study of the theory, one hour per week, for four terms; (2) a carefully arranged daily drill in the exercises, for three terms; and (3) one term's practice as leader and critic.

Theory and Practice of the Kindergarten.

During the second term all the pupils in the school receive a course of lectures on the theory of the kindergarten.

An optional course on the Theory and Practice of the Kindergarten begins the third term, and is pursued all the second year except the time devoted to Principles of Education, Drawing, Practice in Gymnastics, and Observation and Practice in Primary Schools for four weeks.

The pupils who do not elect this optional course in Kindergartening receive a course of lessons in Kindergarten methods during the third term.

Culture of the Students.

From the foregoing sketch of the aims of the different branches of study pursued in the Normal School, it might be inferred that the sole purpose of the school is to make its students acquainted with the science of education and with those methods of instruction and discipline which this science demands. This, however, would be a wrong inference. Several other results usually follow.

In the first place, the students' knowledge of the branches

taught in the primary and grammar schools is materially broadened and deepened. Most of these branches have not been studied at all since the students were in the lower schools themselves. Here they are taken up again and analyzed into their elementary stages, and these stages arranged in their necessary orders of dependence. This work not only requires a recall of what had been formerly learned, but often new facts must be added; and more than this, it demands that the students shall see the entire subjects in all their elements and relations. This is knowledge too deep for the child, but essential for the teacher who aspires to be a true educator. The development of the power of rigid analysis and logical arrangement is one of the chief incidental aims of the school.

While the aim of the Normal School is more particularly to fit its students to teach in Grammar and Primary Schools and in Kindergartens, yet much is done toward fitting them for High School work. Many of the High School studies are brought more or less under consideration, so that our students obtain a deeper insight into them than is possible while studying them for the first time. The Normal pupils learn to look at all subjects from the standpoint of the teacher, and this involves, in addition to a knowledge of the subject itself, a comprehension of its genesis and the necessary dependence of its parts one upon another. So the pupils go out of the Normal School with a profounder knowledge of many of the High School subjects, with an intenser literary spirit, and with a deeper love for scientific pursuits.

Another reflex effect upon the students is what may be called enthusiasm. Their views of the various ways in which it is possible for others to be helped in the acquisition of knowledge and the formation of character are constantly broadening. The possibility of self-development is ever becoming clearer. Consequently, the duty of self-improve-

ment and of devotion to the good of others is made ever more apparent. Thus narrowness and selfishness are made to yield to catholicity of view and feeling, till the desire to become and to do the best is the prevailing sentiment. Nowhere more than in a good Normal school is devotion to duty created.

Finally, we try to infuse into the students of the Normal School a spirit of docility. This puts them in the right relation to criticism. When they begin their work as assistants, they believe it to be their duty to assist. They feel themselves to be learners and not critics. They regard kindly criticism as friendly advice, which they are bound to heed, and for which they should be profoundly grateful. This accounts, in part, for the rapid professional progress for which Normal graduates are noted.

Observation and Practice.

During the first term the Normal pupils have frequent opportunity to see the work of instruction as it is carried on in the Training School. When the methods of teaching any subject, as reading, are under consideration in the Normal School, the pupils are taken to the Training School classes for a practical demonstration of what they are studying. Thus they have an opportunity to see the methods of teaching which they study in the Normal School applied in the Training School. Their practice work the first term is confined to teaching their classmates. The object in this is to make them somewhat familiar with the orderly presentation of subjects, and with the proper sequence of questions in teaching.

During the second term the Normal pupils spend two whole weeks in primary schools, and two in grammar schools.

During the second year the observation and practice are continued, under substantially the same conditions, for eight

weeks in the third term and four weeks in the fourth term. This time is broken into periods of four weeks each, alternating with equal periods of theoretical instruction in the Normal Schools, only one-half of the class being absent from the school at a time.

The Normal pupils are assigned to all the classes in the Training School, and to as many classes in the other public schools of the city as are needed for this purpose, only one pupil being assigned to a class. These classes remain in charge of the regular teachers. The Normal students generally give two or three short lessons daily, under the direction and subject to the criticism of the teachers in charge. The teachers of the Normal School visit the pupils several times during their stay, both in the primary and grammar schools, for purposes of criticism and instruction.

Post-graduate Class.

Usually from half to two-thirds of the graduates join this class; this gives an opportunity to do some excellent work during the first part of the year. The calling-off of the class for substitute service begins at once. Substituting proves to be an excellent training for permanent service. It not infrequently happens that beginners make mistakes when they first take charge of classes that they can avoid with the next classes. In such cases the sooner they take charge of new classes the better. Many a young teacher, who would utterly fail at first if put in charge of a difficult class, gains sufficient power by a few months' experience in general substituting to ensure success in almost any grade.

GRADUATES

OF THE

BOSTON NORMAL SCHOOL.

Class of 1894.

A., Allston; B., Brighton; C., Charlestown; D., Dorchester; F.H., Forest Hills; J.P., Jamaica Plain; R., Roxbury; Ros., Roslindale; S.B., South Boston; W.R., West Roxbury; E.B., East Boston.

Optional courses.—k., kindergarten; g., gymnastics; e.s., elementary science; m.t., manual training; d., drawing; m., music; s., sewing.

Name.	Residence.
Abbott, Abbie G., g.	*35 Cliff Street, R.*
Allen, Viola M., m.t.	*46 St. James Street, R.*
Bent, Gertrude M., m.	*149 North Beacon Street, B.*
Berigan, Susan J., d.	*Linden Street, D.*
Bird, Ellen G., m.	*4 Charter Street.*
Bissell, Emily S. M., m.	*58 Amory Street, Cambridge.*
Boyd, Katherine, d.	*20 Fayette Street.*
Bruhn, Lucy M., e.s.	*57 Boylston Street, J.P.*
Burgess, Mary H., d.	*Norfolk Street, Mattapan.*
Byrne, Catherine F., d.	*99 Warwick Street, R.*
Clapp, Mary E., d.	*11 Clapp Place, D.*
Cotter, Elizabeth F., g.	*83 Chelsea Street, C.*
Cottle, Louise M., e.s.	*13 Copley Street, J.P.*
Crockett, Josephine, m.t.	*13 Brookford Street, R.*
Crotty, Elizabeth G., m.	*49 Camden Street.*
Dennison, Edith, e.s.	*35 Carmel Street, Chelsea.*
Doherty, Katherine F., m.	*37 North Margin Street.*
Downing, Maude E., m.	*14 Evans Street, D.*
Duncklee, Helen L., k.	*59 Chestnut Hill Avenue, B.*

Name.	Residence.
Eaton, Annie J., k.	*Quincy.*
Fitzsimmons, Mary J., m. . .	*16 Sheridan Avenue, J.P.*
Fobes, Alice, k.	*100 Harvard Street, D.*
Fox, Fannie, e.s.	*365 Massachusetts Avenue.*
Griffin, Frances A., e.s. . .	*45 Bainbridge Street, R.*
Griffith, Florence E., g. . .	*767 Tremont Street.*
Hampton, Jessie K., g. . . .	*12 Harwich Street.*
Hartnett, Maude C., d. . . .	*22 Creighton Street, J.P.*
Healey, Mary E., d.	*8 Walnut Place.*
Hennessey, Alice B., d. . .	*Fenton Place, D.*
Holmes, Almeda A., k. . . .	*10 Fountain Street, R.*
Holmes, Charlotte K., e.s. . .	*10 Fountain Street, R.*
Hubbard, Amy L., g. . . .	*29 Elm Street, Cambridgeport.*
James, Sarah A., k.	*2 Linden Street, S.B.*
Johnson, Jessie L., k. . . .	*59 Woodbine Street, R.*
Jones, Etta L., g.	*283 Windsor St., Cambridgeport.*
Joyce, Josephine F., s. . . .	*116 Old Harbor Street, S.B.*
Kelley, Evelyn E., m.t. . .	*261 Shawmut Avenue.*
Kenniff, Ella M., m. . . .	*75 Dorchester Street, S.B.*
Latta, Mabel E., g.	*1 Oakland Street, R.*
Leahy, Cecelia F., m. . . .	*152 Bridge Street, Cambridge.*
Le Favor, Mabel B., m. . .	*106 Chelsea Street, C.*
Long, Emma E., m.	*26 Second Street, E. Cambridge.*
Macarthy, A. Isabelle, g. . .	*17 Rockland Avenue, R.*
Mansfield, Grace S., k. . . .	*305 Havre Street, E.B.*
McGillicuddy, Annie F., m.t. .	*1 Wharf Street.*
McMahan, Katharine J., d. .	*392 W. Fourth Street, S.B.*
McMorrow, Mary F., e.s. . .	*27 Shamrock Street, D.*
Mernin, Margaret A., m. . .	*12 Wesley Street, C.*
Morand, Orphise A., d. . .	*131 Dale Street, R.*
Murphy, Mary F., s. . . .	*453 E. Sixth Street, S.B.*
O'Connell, Catherine C., g. .	*79 Chapman Street, C.*
O'Connell, Mary, g.	*Centre Street, J.P.*
Papineau, Mary A. M., m.t. .	*190 Green Street, J.P.*
Perry, Katharine H., k. . .	*314 Newbury Street.*
Phelan, Edith L., k. . . .	*11 Savin Street, R.*
Rohlsen, Dora W., e.s. . . .	*78 Bloomingdale Street, Chelsea*

Name.	Residence.
ll, Abigail A., c.s. . .	*Norfolk Street, Mattapan.*
on, Helen G., m. . . .	*13 Dorset Street, D.*
ns, Mariannie H., k. .	*52 Putnam Street, E.B.*
Josephine L., e.s. . .	*28½ Myrtle Street.*
Helen G., e.s. . . .	*Navy Yard, C.*
n, Teresa M., d.. . .	*110 Pleasant Street.*
Frances S., k. . . .	*503 Broadway, S.B.*
bly, Mary M. A., m. .	*781 Parker Street.*
Sally, d.	*60 Cliff Street, R.*
n, Mary A., d. . . .	*46 E. Newton Street.*
Margaret E., k. . . .	*Mill Street, cor. Houghton, D.*
ns, Alice G., e.s. . .	*10 Savin Street, R.*
ns, Winifred, g. . . .	*11 Warren Square, J.P.*
n, Myra E., e.s. . . .	*209 Dudley Street, R.*

umber of graduates in 1894	70
umber of previous graduates	1,298
Total	1,368

SCHOOL DOCUMENT NO. 10 — 1894.

ANNUAL REPORT

OF THE

COMMITTEE ON THE HORACE MANN SCHOOL FOR THE DEAF.

1894.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

In School Committee, Boston, Sept. 25, 1894.

Accepted, and the order passed.

Ordered, That six hundred copies of the Annual Report of the Committee on the Horace Mann School be printed.

Attest:

PHINEAS BATES,
Secretary.

REPORT.

The Committee on the Horace Mann School respectfully present the following report:

The usual even current of events at this school, under the able administration of Miss Fuller, the principal, has moved on in its course during the past year, and the committee have no changes to recommend, or experiments to suggest for trial in the conduct of the school.

Its management is admirable, the corps of teachers exceptional, all fully entering into the spirit of the principal, and the pupils appear to be possessed with an energy and zeal to acquire knowledge, that is most refreshing and agreeable to witness.

The grand work of this magnificent school, magnificent not only in its building and equipment, but in its work and influence, should be the pride of every member of the School Committee of the city, and also of every citizen of Boston and of the State. Here are almost miracles performed. Those of whom Lucretius despairingly wrote:

> "To instruct the deaf no art could ever reach,
> No care improve them, and no wisdom teach,"

are here taught not only to speak and to understand spoken language, but also everything that is needed to prepare them to be good and useful citizens, helpful to themselves and to the community, and capable of bearing almost an equal burden with their more fortunate fellows in the battle of life.

How noble such a work: to take a child shut out in a

large measure from the world and its beauties, and to make of that child a self-respecting, intelligent being, — one cannot imagine a service more uplifting, more worthy, more noble, or of more enduring benefit to the world at large.

The committee earnestly request every member of the Board to acquaint themselves with the work of this school.

The steady movement, onward and upward, in the path of progress which this school is making is a constant witness to the wisdom, skill, and faithfulness of its teachers, and the committee are pleased to take this opportunity of expressing their appreciation of their work, from the highest to the lowest in rank in the school.

With a carefully arranged plan of work, differing but little from that followed by the ordinary primary and grammar schools of the city, and with a corps of teachers whose conscientious zeal enables these deaf children to acquire a useful education while learning to speak, and to understand the speech of others, this school offers to its pupils advantages which they and their parents realize more and more each year.

This appreciation is shown by the increased number of children brought for admission each year, at the earliest possible age at which they can enter the school.

During the past year there were one hundred and six pupils in attendance; at the close of the school-year in June there were ninety-eight pupils, forty-seven boys and fifty-one girls, belonging to the school; two having moved away from Boston, one having gone to work, two discontinuing attendance on account of illness, and three having died during the year; of this number, sixty-two were residents of the city, thirty-four were from other parts of Massachusetts, and two were from outside the State. The generous provision of the State government in defraying the expense of the necessary transportation of the pupils to the school enables many parents to send children who would otherwise be unable to

do so, and besides produces a regular and punctual attendance of the pupils. The committee desire to express their thanks to the many friends of the school who have evidenced by their kind attentions to its needs their appreciation of its work, and earnestly bespeak from them a continuance of their kindly services. The gymnastic exhibition given in the drill-hall of the English High School last April gave opportunity of showing the proficiency of the pupils in speech-reading. A class from the school took part in that exhibition, and executed the orders, which were given orally the same as to the pupils with hearing, admirably and with credit to themselves and to their instructors. Each year brings encouraging reports of the work of pupils who have gone from this school to those for hearing pupils. One of our boys who graduated last year from the high school course of the Berkeley School (private) completed the work in the same time as the other members of his class, all of them pupils with hearing. His average for the year was eighty-seven per cent. Another who entered the same school last September passed creditably through the first year's work in the High School course.

One of our girls was admitted to a private school in a neighboring city, and her use of speech and her ability to understand the rapid talk of her teachers and companions made it possible for her to do class-work without difficulty. She enters the High School department of the school this year.

Instruction in sewing and in sloyd has been given this year as in former years. In these classes, as in all others, speech and speech-reading are in constant use.

Through the gifts of friends the lessons in type-setting and printing have been continued during the past year, and the committee desire to express their thanks to Miss Anna D. Hallowell, Chairman of the Committee on Manual Training for Deaf Children, on the part of the Women's Educa-

tion Association, for her kind interest in the maintenance of the same. The efficiency of this work has been greatly increased by the use of the Columbian press supplied by the School Board early in the year, many slips and exercises being now printed upon it, thus combining useful and instructive practice.

One of the boys of the printing class took additional lessons in press work in a printing establishment, and in commenting upon his work, a member of the firm writes: "The young man takes hold better than any boy I ever knew, and I think he will get the knowledge required to make a job ready for the press in a few lessons." The bequest of Mr. Sawyer still remains unpaid, but steps are being taken to adjust the same, and the law department of the city have the matter in charge.

The committee desire to correct the statement in last year's report as to the payment of this bequest and its investment, and would respectfully suggest that as there is no one at present authorized to receive such a bequest, action be taken by the committee looking towards the authorization of some party or parties to receive the same, and to expend the income arising therefrom for the benefit of the school.

In view of the approaching anniversary which marks the completion of the twenty-fifth year of the existence of the school, during which the school has grown from an experiment to an assured success, it seems fitting to review its past, and for this purpose we quote from the published history of the Horace Mann School:

"To the Rev. Dexter S. King belongs the honor of securing to the deaf children of Boston and vicinity their right to live in their own homes, under the care of their parents, while receiving a common-school education.

"While serving upon a committee, appointed by the Legislature, to consider the granting of a charter for what is now

the Clarke Institution at Northampton, Mr. King became deeply interested in the education of deaf children. As a member of the School Board of Boston he was in sympathy with all measures having for their object the advancement of educational work, and when he learned of the limited opportunities for instruction then afforded young deaf children, his heart and brain were quickened with a desire to give them, as well as their more fortunate brothers and sisters, the benefit of early school training. To establish a public day-school which children of all ages could attend seemed to him the best plan for bringing school advantages within the reach of all classes.

"In presenting his wishes to his associates upon the School Board, Mr. King said that 'such a school ought to be established, for the reason that there are enough deaf-mute children in the city entirely destitute of the means of education to form such a school, and whose friends would joyfully improve the opportunity of sending them to school.' After a careful consideration of the subject it was decided to open such a school under the direction of the Boston School Board, and to make it 'a public benefit beyond the limits of Boston by offering its privileges to children in surrounding cities and towns.' Following this action of the School Board was the passage of an act by the Legislature [May 28, 1869] providing that pupils might be sent, at the expense of the State, to the proposed school, as well as to the existing institutions. The recognition and assistance thus early extended has continued without interruption to the present time."

The first session of the school was held on the 10th November, 1869. Because no suitable rooms could be found in a central part of the city the pupils were taught in separate divisions, a morning session for one in East street, and an afternoon session for the other in Somerset street, until January, 1870, when they were brought together in rooms

in Pemberton square. The plan of instruction adopted was that known as the pure oral method, and this plan has since been pursued. Every child is taught to speak, and to read the speech of others from the lips, as well as to read and understand printed language. The use of written language begins with a child's admission to the school, and is continued throughout the course, which embodies the studies taken in the primary and grammar schools of Boston. Speech is employed in all the classes in both primary and grammar departments, and the recitations are conducted as in schools for hearing children.

This school was the first in the United States to adopt Visible Speech as an aid to articulation-teaching. Instruction in this system was desired by Miss Fuller before the school was opened, but it was not until 1871 that it was obtained. In that year Prof. Alexander Graham Bell, son of the inventor of this system, spent the months of April and May in giving to the teachers and pupils a knowledge and use of the symbols of Visible Speech. The widespread interest felt in this country in articulation-teaching, and the success of the work, are undoubtedly due to the system of Visible Speech.

So plainly and so simply has Prof. Alexander Melville Bell shown by this system how the organs of speech are used, and how the movements of the mouth in speech may be interpreted by the eye, that it may be truly said of him, "He maketh the deaf to hear, and the dumb to speak."

In September, 1875, the school, having outgrown its accommodation in Pemberton square, was removed to a building on Warrenton street, where it remained for fifteen years. These years are characterized by a steady and continuous improvement in the work and in the influence of this school. The growth of the school and its consequent needs were the occasion of a request in July, 1879, to the City Council "to remodel the Horace Mann School-house to accommodate the increasing demands of the school."

It was considered inexpedient to do this, and although various methods were suggested, nothing was done until April, 1885, when the State gave a lot of land on which to erect a building. Delays in appropriating money and other causes prevented the completion of the school-house before the summer of 1890. In June of that year all the classes were moved into that building, and on the tenth of the following November, twenty-one years from the opening of the school, the house was formally dedicated. On that occasion the Hon. Gardiner Greene Hubbard, of Washington, D.C., delivered an historical address.

In 1888 the Legislature passed an act providing that the travelling expenses of pupils attending schools for the deaf should be paid by the Commonwealth, and in April of the following year an act was passed granting an extension of school-time for deaf children beyond the limit of ten years.

Three hundred and seventy-three children have been enrolled as members of this school. Of the more than two hundred who are among the wage-earners of to-day, gratifying reports of success and happiness are frequently brought to the school. Among the many beneficent results directly traceable to the influence of the Horace Mann School is the establishment of similar schools in other cities. The pupils who formed the nucleus of the school in Portland, Me., and of the school in Providence, R.I., had been taught in the Horace Mann School. The founding of the Sarah Fuller Home, an infant school for deaf children, and a recognition of the value and importance of its work, are largely due to an interest created by the Horace Mann School.

In an account recently published of a day-school for deaf children in the city of Greenock, Scotland, we learn that the school is carried on in the same building as one for children with hearing. This is considered by the school authorities of that city as a wise arrangement, as "The deaf children have the advantage of mixing with hearing children

at play-time. This mixing with hearing children teaches deaf children habits of self-reliance and independence, and helps them to feel interested in what is going on around them in the world." May we not hope that progress in the education of the deaf in Massachusetts may be in this direction, and that we may look forward to the time when we will place classes of deaf children in our regular schools, in order that they may acquire their education in as nearly the same environment as is possible to surround them with, as that in which they will be compelled to exercise it?

Respectfully submitted,

E. C. MARSHALL, *Chairman.*
HENRY D. HUGGAN,
ALFRED BLANCHARD.

IN SCHOOL COMMITTEE, Sept. 25, 1894.

Ordered, That the Committee on Legislative Matters consider and report what action should be taken by this body in the matter of the receipt and custody of funds bequeathed the Horace Mann School for the Deaf.

APPENDIX.

I.

Education of the Deaf and Dumb.

Section 15. Every institution for the instruction of the deaf, dumb, and blind, when aided by a grant of money from the State treasury, shall annually make to the Board such a report as is required, by sections sixteen and seventeen of chapter seventy-nine, of other private institutions so aided.

Sect. 16. [Section 16 of the Public Statutes is repealed by chapter 239 of the Acts of the year 1888, and the following substituted:]

Upon the request of the parents or guardians, and with the approval of the state board of education, the governor may send such deaf-mutes or deaf children as he may deem fit subjects for education, for a term not exceeding ten years in the case of any pupil, to the American Asylum at Hartford in the State of Connecticut, the Clarke Institution for Deaf-Mutes at Northampton, or to the Horace Mann School at Boston, or to any other school for deaf-mutes in the commonwealth, as the parents or guardians may prefer; and with the approval of the state board he may make at the expense of the commonwealth such provision for the care and education of children, who are both deaf-mutes and blind, as he may deem expedient. In the exercise of the discretionary power conferred by this act no distinction shall be made on account of the wealth or poverty of the parents or guardians of such children; no such pupil shall be withdrawn from such institutions or schools except with the consent of the proper authorities thereof or of the governor; and the sums necessary for the instruction and support of such pupils in such institutions or schools, including all travelling expenses of such pupils attending such institutions or schools, whether daily or otherwise, shall be paid by the commonwealth:

provided, however, that nothing herein contained shall be held to prevent the voluntary payment of the whole or any part of such sums by the parents or guardians of such pupils.

SECT. 17. The board shall direct and supervise the education of all such pupils, and shall set forth in its annual report the number of pupils so instructed, the cost of their instruction and support, the manner in which the money appropriated by the commonwealth therefor has been expended, and such other information as it deems important to be laid before the general court.

Pupils are now sent under the above sections to the Horace Mann School for the Deaf in Boston, the Clarke Institution at Northampton, and the American Asylum at Hartford, Conn.

Blanks for application for admission to these several institutions will be supplied, on request, by the secretary of the State Board of Education.

II.

REGULATIONS OF THE HORACE MANN SCHOOL.

(*Chapter XXIII. of the Regulations of the Public Schools of the City of Boston.*)

SECTION 315. This school was established by the Boston School Committee, in coöperation with the State Board of Education, as a day-school for deaf children to whom it may be accessible.

SECT. 316. Pupils over five years of age are admitted in accordance with an act passed by the Legislature in 1869. (Public Statutes, Chap. 41, Sect. 16.)[1]

"With the approval of the board of education, the governor may send such deaf-mutes or deaf children as he may deem fit subjects for education [at the expense of the Commonwealth], for a term not exceeding ten years in the case of any pupil, to the American Asylum at Hartford, [or to] the Clarke Institution for Deaf-Mutes at Northampton,[2] or to any other school for deaf-mutes in the commonwealth, as the parents or guardians may prefer."

[1] Now, 1887, Chapter 179.

[2] Now inserted, "or to the Horace Mann School at Boston."

SECT. 317. This school is designed to give an elementary English education; but, as a preparation for this, it must first impart to pupils entering as deaf-mutes the meaning and use of ordinary language. It aims to teach all its pupils to speak and to read the speech of others from their lips. The general regulations of the public schools, Chapter XVI., so far as applicable, are to be enforced in this school.

SECT. 318. Pupils who have completed the course of study to the satisfaction of the Committee on Examinations shall be entitled to a diploma. The diploma shall be signed by the President of the Board and the principal of the school.

SECT. 319. The sessions of this school shall begin at 9 A.M., and close at 2 P.M., on every week-day except Saturdays, when there shall be no session.

[*Extract from the Rules of the School Committee.*]

SECT. 110. The instructors for this school shall be a principal, an assistant principal, and assistants. Besides the principal, one instructor shall be allowed for every ten pupils, and an excess of five pupils shall entitle the school to an additional instructor. When an instructor, not a principal, is needed, the committee on the school shall recommend a suitable person to the Board through the Committee on Nominations.

III.

TERMS OF ADMISSION.

Any deaf child over five years of age, not mentally nor physically disqualified, is entitled to admission. No pupil will be admitted without a certificate of vaccination, signed by a physician.

Parents or guardians desiring the admission of children as State pupils can obtain the blank form of application, and other instructions, at the school, No. 178 Newbury street, or at the office of the Secretary of State.

Children from other States will be received, subject to the above conditions, on the payment of tuition, or upon warrants from the executives of such States.

The school year begins on the first Wednesday in September, and ends on the last Tuesday in June; but pupils are admitted at any time.

Communications and letters may be addressed to the principal, Miss Sarah Fuller, No. 178 Newbury street, Boston.

APPLICATION FOR THE INSTRUCTION OF DEAF CHILDREN.

189 .

To His Excellency the Governor:

I, of , in the County of , and Commonwealth of Massachusetts, respectfully represent to Your Excellency, that my[1] , aged years, is DEAF, and cannot be properly instructed in the public schools of this Commonwealth.

I therefore respectfully request that Your Excellency will send either to the American Asylum at Hartford, the Horace Mann School at Boston, or the Clarke Institution at Northampton.

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189 .

The undersigned believe , a resident of this , to be incapable of receiving instruction in our public schools by reason of deafness, and therefore entitled to a place in one of the schools designated by law for deaf children.

} *Selectmen of*

or

} *Mayor of*

189 .

I hereby certify that the above-named , a deaf child, is free from all contagious diseases, and, as I believe, from all immoralities of conduct; is neither sickly nor mentally weak, and is a fit subject for instruction at the expense of the Commonwealth.

_____ *M. D.*

NOTE. — The first of the above declarations must be signed by the parent or guardian of the applicant; the second by the selectmen, or a majority of them, of the town, or by the mayor of the city, where the applicant resides; and the third by the family physician, or some other competent medical practitioner. In case the request for admission is granted, the parent or guardian will be forthwith notified, and a warrant will be forwarded to the principal. Pupils can be admitted to the Horace Mann School at any time between the beginning of September and the end of June.

[1] Insert son, daughter, or ward, with name.

THE PARENT OR GUARDIAN WILL ANSWER THE FOLLOWING QUESTIONS.

1. Name of parents.
2. Residence.
3. Birthplace of parents.
4. Were they deaf-mutes?
5. Have they other children deaf ?
6. Name of child.
7. Birthplace of child.
8. Was the child born deaf ?
9. Has the child ever spoken?
10. If it has, when was hearing lost?
11. What was the cause?
12. Has the child ever been at school?
13. How much has the child been taught?
14. Is it preferred to have the child sent to the American Asylum, Hartford, the Horace Mann School at Boston, or the Clarke Institution, Northampton?
15. Is the child mentally weak?
16. Does the child now speak, — if so, how many words?
17. REMARKS.

SCHOOL DOCUMENT NO. 11—1894.

BOSTON PUBLIC SCHOOLS.

LIST

OF

Authorized Text and Reference Books

AND

SUPPLEMENTARY READING BOOKS

FOR

SCHOOL YEAR 1894-95.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

In School Committee, Boston, Sept. 25, 1894.

Ordered, That the list of authorized text-books, reference-books, and supplementary reading books for 1894–95 be printed.

Attest:

PHINEAS BATES,
Secretary.

TEXT-BOOKS.

PRIMARY SCHOOLS.

Third Class. — New Franklin Primer and First Reader. Munroe's Primary Reading Charts.

Second Class. — New Franklin Second Reader. Franklin Advanced Second Reader. Franklin Primary Arithmetic. First Music Reader.

First Class. — Franklin Third Reader. [1] New Franklin Third Reader. Franklin Primary Arithmetic. First Music Reader.

Upper Classes. — First Lessons in Natural History and Language, Parts I. and II. Child's Book of Language, Nos. 1, 2, 3. [By J. H. Stickney.]

All the Classes. — First Primary Music Chart. Prang's Natural History Series (one set for each building). [2] Books and charts of the Normal Music Course. [2] Books and charts of the Revised National Music Course.

Magnus & Jeffries's Color Chart; "Color Blindness," by Dr. B. Joy Jeffries. (One copy of the chart and one copy of the book for use in each Primary-School building.)

GRAMMAR SCHOOLS.

Sixth Class. — Franklin Advanced Third Reader. [3] Metcalf's Language Lessons. [4] Warren's Primary Geography. Intermediate Music Reader. Franklin Elementary Arithmetic. [5] Greenleaf's Manual of Mental Arithmetic. Worcester's Spelling-Book. Blaisdell's Physiology for Little Folks.

[1] To be furnished at the discretion of the Committee on Supplies.

[2] The selection of the particular course to be used to be determined by the Committee on Music. New books to be furnished whenever, in the judgment of the Committee on Supplies, our financial condition will warrant it.

[3] One set to be supplied for every two rooms of the third, fourth, fifth, and sixth classes.

[4] Swinton's Introductory Geography allowed in Charlestown Schools.

[5] To be used in the manner recommended by the Board of Supervisors in School Document No. 14, 1883; one set of sixty copies to be supplied for the classes on each floor of a Grammar-School building occupied by pupils in either of the four lower classes, and for each colony of a Grammar School.

Fifth Class. — Franklin Intermediate Reader. [1] New Franklin Fourth Reader. [2] Metcalf's Language Lessons. Franklin Elementary Arithmetic. [3] Greenleaf's Manual of Mental Arithmetic. [4] Warren's Primary Geography. Intermediate Music Reader. Worcester's Spelling-Book. [5] Stowell's A Healthy Body. [5] Blaisdell's Physiology for Little Folks.

Fourth Class. — Franklin Fourth Reader. [1] New Franklin Fourth Reader. [2] Metcalf's Language Lessons. Worcester's Comprehensive Dictionary. Franklin Written Arithmetic. [3] Greenleaf's Manual of Mental Arithmetic. [4] Warren's Common-School Geography. Intermediate Music Reader. Worcester's Spelling-Book. Stowell's A Healthy Body.

Third Class. — Franklin Fifth Reader. [1] New Franklin Fifth Reader. [2] Metcalf's Language Lessons. Franklin Written Arithmetic. [3] Greenleaf's Manual of Mental Arithmetic. [4] Warren's Common-School Geography. Swinton's New Language Lessons. Worcester's Comprehensive Dictionary. Higginson's History of the United States. [6] Fourth Music Reader [Revised Edition]. [7] Blaisdell's Young Folks' Physiology.

Second Class. — Franklin Fifth Reader. [1] New Franklin Fifth Reader. Franklin Written Arithmetic. [4] Warren's Common-School Geography. Tweed's Grammar for Common Schools. Worcester's Comprehensive Dictionary. Montgomery's Leading Facts of American History. Sheldon Barnes American History. [6] Fourth Music Reader [Revised Edition]. [7] Blaisdell's Young Folks' Physiology.

First Class. — Franklin Sixth Reader. Masterpieces of American Literature (Houghton, Mifflin, & Co.). Franklin Written Arithmetic. Meservey's Book-keeping, Single Entry. [4] Warren's Common-School Geography. Tweed's

[1] To be furnished at the discretion of the Committee on Supplies.

[2] One set to be supplied for every two rooms of the third, fourth, fifth, and sixth classes.

[3] To be used in the manner recommended by the Board of Supervisors in School Document No. 14, 1883; one set of sixty copies to be supplied for the classes on each floor of a Grammar-School building occupied by pupils in either of the four lower classes, and for each colony of a Grammar School.

[4] The revised edition to be furnished at the discretion of the Committee on Supplies to schools where this book is used. Swinton's Grammar-School Geography allowed in Charlestown Schools.

[5] The text-books in physiology for the fifth class to be supplied from those furnished for use in the fourth and sixth classes.

[6] The Revised Edition to be supplied as new books are needed.

[7] Blaisdell's Young Folks' Physiology to be supplied to the pupils of the third class only, and to be used interchangeably in the second and third classes.

Grammar for Common Schools. Worcester's Comprehensive Dictionary. Montgomery's Leading Facts of American History. Sheldon Barnes American History. [1] Stone's History of England. Cooley's Elements of Philosophy. [2] Fourth Music Reader [Revised Edition]. Mowry's Elements of Civil Government.

Fifth and Sixth Classes. — First Lessons in Natural History and Language, Parts III. and IV.

All Classes. — Writing-Books: Duntonian Series: Payson, Dunton, and Scribner's; Harper's Copy-Books; Appleton's Writing-Books. Child's Book of Language; and Letters and Lessons in Language, Nos. 1, 2, 3, 4. [By J. H. Stickney.] Prang's Aids for Object Teaching, "Trades" (One set for each building). [3] Books and Charts of the Normal Music Course. [3] Books and Charts of the Revised National Music Course. Hapgood's School Needlework — one set of sixty copies to be supplied to each school where sewing is taught.

HIGH SCHOOLS.

English. — Abbott's How to Write Clearly. Hill's Foundations of Rhetoric. Carpenter's Exercises in Rhetoric and Composition. Scott's Lady of the Lake. [4] Thurber's Select Essays of Addison. [4] Selections from Addison's Papers in the Spectator, with Macaulay's Essay on Addison. Irving's Sketch-Book. Trevelyan's Selections from Macaulay. Hale's Longer English Poems. Shakespeare. — Rolfe's *or* Hudson's Selections. Selections from Chaucer. Selections from Milton [Clarendon Press Edition. Vol. I.] Worcester's Comprehensive Dictionary.

The following-named books are authorized for use as a special list of text-books in English in the High Schools; copies of these books to be furnished in addition to the supply of regular text-books, in such numbers as may be desired, provided that the aggregate number of books furnished from this list to any High School shall not exceed the number of pupils in the junior class in that school:

Longfellow's Poems (Household Edition). Selections from Lowell's Poems, Modern Classics, Vol. 5. Selections from Lowell's Prose, Modern Classics, Vol. 31. Se-

[1] No more copies of Stone's History of England to be purchased.
[2] The Revised Edition to be supplied as new books are needed.
[3] The selection of the particular course to be used to be determined by the Committee on Music.
[4] Thurber's Select Essays of Addison to take the place of "Selections from Addison's Papers in the Spectator, with Macaulay's Essay on Addison" as new books are needed.

lections from Emerson's Prose, Modern Classics, Vol. 2. Selections from Whittier's Prose, Modern Classics, Vol. 4. Macaulay's Lays of Ancient Rome, Modern Classics, Vol. 26. Palgrave's Golden Treasury. Tennyson's Selected Poems (Rolfe's Students' Series). Selections from Wordsworth (George). Thurber's Select Essays of Macaulay. Thackeray's Henry Esmond. Scott's Talisman. Scott's Quentin Durward. Hawthorne's House of Seven Gables. George Eliot's Silas Marner.

Latin. — Allen & Greenough's Latin Grammar. Harkness's Latin Grammar. Harkness's New Easy Latin Method. Gildersleeve's Latin Primer. Collar & Daniell's Beginners' Latin Book [Roxbury, West Roxbury, and Brighton High Schools]. Harkness's Cæsar. Collar's Gate to Cæsar. Allen & Greenough's Cæsar [Roxbury, West Roxbury, and Brighton High Schools]. Lindsey's Cornelius Nepos. Chase's, Friez's, *or* Greenough's Virgil, or any edition approved by the Committee on Text-Books. Greenough's *or* Harkness's Cicero. Chase's *or* Lincoln's Horace, or any edition approved by the Committee on Text-Books.

History. — Myer's General History. Sheldon's General History. Fiske's Civil Government.

Mythology. — Beren's Hand-Book of Mythology.

Mathematics. — Meservey's Book-keeping. Seavy's Practical Business Book-keeping by Double Entry. Seavy's Manual of Business Transactions. Bradbury & Emery's Academic Algebra. [1] Wentworth & Hill's Exercises in Algebra. Bradbury's Academic Geometry, *or* Chauvenet's Geometry, *or* Wells's Geometry, *or* McDonald's Principles of Plane Geometry. Greenleaf's Trigonometry. [2] Metric Apparatus.

Physics. — Cooley's New Text-Book of Physics. Avery's Physics, *or* Gage's Introduction to Physical Science. Gage's Laboratory Manual of Physics.

Astronomy. — Young's Astronomy.

Chemistry. — Williams's Chemistry. Williams's Laboratory Manual. Shepard's Chemistry. Eliot & Storer's Elementary Manual of Chemistry, edited by Nichols. Eliot & Storer's Qualitative Analysis. Hill's Lecture Notes on Qualitative Analysis. Tables for the Determination of Com-

[1] This book is not intended to, and does not in fact, displace any text-book now in use, but is intended merely to furnish additional problems in algebra.

[2] Not exceeding $15 for each school.

mon Minerals [Girls' High School]. White's Outlines of Chemical Theory. A Record of Laboratory Work [D. C. Heath & Co.].

Botany. — Gray's School and Field Book of Botany.

Zoölogy. — Morse's Zoölogy and Packard's Zoölogy.

Physiology. — Hutchison's Physiology. Martin's Human Body — Edition with Special Treatment of Alcohol and other Stimulants and Narcotics.

Phonography. — Benn Pitman's Manual of Phonography. Reporter's Companion.

Music. — Eichberg's High-School Music Reader. Eichberg's New High-School Music Reader. Eichberg's Girls' High-School Music Reader [Girls' High School].

LATIN SCHOOLS.

Latin. — [1] White's Abridged Lexicon. Lewis's Elementary Latin Dictionary. Harkness's Grammar. Harkness's Reader. Harkness's New Easy Latin Method. Harkness's Prose Composition. Collar's Practical Latin Composition. Harkness's Cæsar. Collar's Gate to Cæsar. Lindsey's Cornelius Nepos. Greenough's Catiline of Sallust. Lincoln's Ovid. Greenough's Ovid. Greenough's Virgil. Greenough's *or* Harkness's Orations of Cicero. Smith's Principia Latina, Part II.

Greek. — Liddell & Scott's Abridged Lexicon. Goodwin's Grammar. [2] White's Beginners' Greek Book. [2] White's Lessons. Jones's Prose Composition. Goodwin's Reader. The Anabasis of Xenophon. Boise's Homer's Iliad. Seymour's School Iliad. Beaumlein's Edition of Homer's Iliad.

English. — Soule's Hand-book of Pronunciation. Hill's General Rules for Punctuation. Tweed's Grammar for Common Schools (in fifth and sixth classes). Strang's English Lessons. Hawthorne's Wonder Book. Hawthorne's Tanglewood Tales. White's Boys' and Girls' Plutarch (Quarto Illustrated Edition). Macaulay's Lays of Ancient Rome. Higginson's History of the United States. Hughes's Tom Brown's School-Days at Rugby. Dana's Two Years Before the Mast. Charles and Mary Lamb's Tales from Shakespeare [Revised Edition, Houghton, Mifflin, & Co.].

[1] No more copies of White's Abridged Lexicon to be purchased.

[2] White's Beginners' Greek Book to take the place of White's Lessons as new books are needed.

Scott's Ivanhoe. Hawthorne's True Stories. Greene's Readings from English History. [1] Church's Stories from Homer. [1] Church's Stories of the Old World. Selections from American Authors, — Franklin, Adams, Cooper, and Longfellow. American Poems, with Biographical Sketches and Notes. Irving's Sketch-Book. Selections from Addison's Papers in the Spectator. Ballads and Lyrics. Hale's Longer English Poems. Three plays of Shakespeare, — Rolfe's *or* Hudson's Selections.

History. — Leighton's History of Rome. Allen's Short History of the Roman People. Smith's Smaller History of Greece. Oman's History of Greece. Long's *or* Ginn & Heath's Classical Atlas. Smith's Smaller Classical Dictionary (Student's Series).

Mythology. — Bulfinch's Age of Fable.

Geography. — Geikie's Primer of Physical Geography. Warren's Common School Geography. [2] Kiepert's Atlas Antiquus.

Physiology. — Macé's History of a Mouthful of Bread. Foster's Physiology (Science Primer). Blaisdell's Our Bodies and How We Live.

Botany. — Gray's School and Field Book of Botany.

Zoölogy. — Morse's Zoölogy and Packard's Zoölogy.

Mineralogy. — Tables for the Determination of Common Minerals [Girls' Latin School].

Mathematics. — The Franklin Written Arithmetic. Bradbury & Emery's Academic Algebra. [3] Wentworth & Hill's Exercises in Algebra. [3] Wentworth & Hill's Exercise Manual in Arithmetic. Chauvenet's Geometry. Lodge's Elementary Mechanics.

Physics. — Hall & Bergen's Physics *or* Gage's Physics.

Music. — Eichberg's High-School Music Reader. Eichberg's New High-School Music Reader. Eichberg's Girls' High-School Music Reader [Girls' Latin School].

LATIN AND HIGH SCHOOLS.

French. — Keetel's Elementary Grammar. Keetel's Analytical French Reader. Super's French Reader. [4] Sauveur's

[1] No more copies of Church's Stories from Homer to be purchased, but as books are worn out their place to be supplied with Church's Stories of the Old World.

[2] To be supplied as new Atlases are needed.

[3] These books are not intended to, and do not in fact, displace any text-book now in use, but are intended merely to furnish additional problems in algebra and arithmetic.

[4] To be furnished as new French Readers are needed. The use of the book confined for this year to the English, Charlestown, Roxbury, and West Roxbury High Schools.

Petites Causeries. Hennequin's Lessons in Idiomatic French. Grandgent's Short French Grammar. [1] Gasc's French Dictionary. [2] Heath's French Dictionary. Erkmann-Chatrian's Le Conscrit de 1813. Erkmann-Chatrian's Madame Thérèse. Bôcher's College Series of French plays. Nouvelles Genevoises. Souvestre's Au Coin du Feu. Racine's Andromaque. Racine's Iphigénie. Racine's Athalie. Molière's Bourgeois Gentilhomme. Molière's Precieuses Ridicules. Corneille's Les Horaces. Corneille's Cid. Herrig's La France Littéraire. Roemer's French Course, Vol. II. Ventura's Peppino. Halévy's L'Abbé Constantin. La Fontaine's Fables. About's La Mère de la Marquise. Daudet's Siège de Berlin. Daudet's Extraits. Daudet's La Belle Nivernaise. La Nervaine de Collette. Marcillac's Manuel d'Histoire de la Littérature Française [fourth-year class in High Schools]. Materials for French Composition [Grandgent]. Abeille [A. France]. Colomba [P. Merimée]. Historiettes Modernes [edited by C. Fontaine]. Kimball's Exercises in French Composition [High Schools]. French Fairy Tales (Edited by Joynes). La Famille de Germandre (Sand). Episodes from Sans Famille (Malot).

German. — [3] Whitney's German Dictionary. Heath's German Dictionary. Whitney's Grammar. Sheldon's German Grammar. Collar's Eysenbach. Otto's *or* Whitney's Reader. Brandt's German Reader. Harris's German Lessons. Der Zerbrochene Krug. Schiller's Wilhelm Tell. Schiller's Maria Stuart. Goethe's Hermann und Dorothea. Putlitz's Das Herz Vergessen. Grimm's Märchen. Goethe's Prose. Schiller's Prose. Stein's German Exercises. Heine's Die Harzreise. Im Zwielicht, Vols. I. and II. Traumerein. Buckheim's German Poetry for Repetition. Minna von Barnhelm (Lessing). Aus dem Staat Friedrichs des Grossen (Freytag). Riech's Der Fluch der Schönheit [Latin Schools and fourth-year classes in the High Schools]. Goethe's Dichtung und Wahrheit [Latin Schools and fourth-year classes in the High Schools].

MECHANIC ARTS HIGH SCHOOL.

All text-books, authorized for use in the Latin and High Schools, are authorized for use in the Mechanic Arts High School.

[1] No more copies of Gasc's French Dictionary to be purchased.
[2] To be supplied as French Dictionaries are needed.
[3] No more copies of Whitney's German Dictionary to be purchased.

NORMAL SCHOOL TEXT-BOOKS.

The text-books used in this school shall be such of the text-books used in the other public schools of the city as are needed for the course of study, and such others as shall be authorized by the Board.

Normal Music Course.

HORACE MANN SCHOOL TEXT-BOOKS.

Such text-books shall be supplied to the Horace Mann School as the committee on that school shall approve.

EVENING HIGH SCHOOL TEXT-BOOKS.

Benn Pitman's Manual of Phonography. Reporter's Companion. The Phonographic Reader. The Reporter's First Reader. Bradbury's Elementary Geometry. Montgomery's Leading Facts in American History.

The text-books used in this school shall be such of the text-books authorized in the other public schools as are approved by the Committee on Evening Schools and the Committee on Supplies.

EVENING ELEMENTARY SCHOOL TEXT-BOOKS.

Munroe's Charts. Franklin Primer. Franklin Reader. Stories of American History. Harper's Introductory Geography. The Franklin Elementary Arithmetic. The Franklin Written Arithmetic. [1] Andersen's Märchen. Writing-books, Plain Copy-books, and such of the text-books authorized in the other public schools as are approved by the Committee on Evening Schools and the Committee on Supplies.

SCHOOLS OF COOKERY.

Boston School Kitchen Text-book, by Mrs. D. A. Lincoln.

[1] In schools in which the English language is taught to German pupils.

REFERENCE-BOOKS.

KINDERGARTENS.

In the Child's World (Poulsson) (one copy for each Kindergarten). Kindergarten chart, Froebel's Grandmother and Mother, prepared by E. F. Bethmann (one copy for each Kindergarten).

PRIMARY SCHOOLS.

Worcester's Comprehensive Dictionary. National Music Teacher. Munroe's Vocal Gymnastics. Lessons in Color (one copy for each Primary-School teacher's desk). White's Oral Lessons in Number (one copy for each Primary-School teacher's desk). Smith's Primer of Physiology and Hygiene (one copy for each Primary-School teacher's desk). Blaisdell's Physiology for Little Folks (one copy for the desk of each teacher of the first class).

Observation Lessons in the Primary Schools (Hopkins) (one copy for each Primary-School teacher's desk).

Simple Object Lessons (two series), by W. Hewitt Beck. Natural History Object Lessons, by G. Ricks (one set of books of each title for each Primary-School teacher's desk). Enebuske's Progressive Gymnastic Day's Orders (one copy for the desk of each teacher). Nissen's A B C of Swedish Educational Gymnastics (one copy for the desk of each teacher). Cutler's Primary Manual Training (one copy for the desk of each teacher). From Seed to Leaf (Newell) (one copy for the desk of each teacher of the first class).

GRAMMAR SCHOOLS.

Appleton's American Encyclopædia *or* Johnson's Encyclopædia. Chambers's Encyclopædia. Anthon's Classical Dictionary. Thomas's Dictionary of Biography and Mythology.

Worcester's Quarto Unabridged Dictionary. Webster's Quarto Unabridged Dictionary. Webster's National Pictorial Dictionary.

Lippincott's Gazetteer. Johnson's Atlas. Reclus's Earth. Reclus's Ocean. Reclus's Birds-eye View of the World.

Flammarion's Atmosphere. Weber's Universal History. Bancroft's History of the United States. Battle Maps of the Revolution. Palfrey's History of New England. Frothingham's Rise of the Republic. Lossing's Field Book of the Revolution. Shurtleff's Topographical History of Boston. Frothingham's Siege of Boston. Lingard's History of England. Smith's Primer of Physiology and Hygiene (one copy for the desk of each teacher of the fifth and sixth classes). Frye's Geography Teaching (one copy for the desk of each teacher of the fifth and sixth classes). Fables and Anecdotes and Stories for Teaching Composition (one copy for the desk of each teacher of the sixth class). Champlin's Young Folks' Cyclopædia of Persons and Places. Champlin's Young Folks' Cyclopædia of Common Things. MacCoun's Historical Geography of the United States. MacCoun's Historical Charts of the United States. Bulfinch's Age of Fable.

Goold-Brown's Grammar of English Grammars. Wilson's Punctuation. Philbrick's Union Speaker. Methods of Teaching Geography (one copy for each teacher of Geography). Posse's Swedish System of Gymnastics. Enebuske's Progressive Gymnastic Day's Orders (one copy for the desk of each teacher). Nissen's A B C of Swedish Educational Gymnastics (one copy for the desk of each teacher). Guides for Science Teaching — published by D. C. Heath & Co. — (one set to be supplied to each Grammar School). Happood's School Needlework — Teachers' Edition — (one copy for each Instructor of Sewing). Patriotic Selections for Memorial Day (Mathews & Rule) (one copy for each school). From Seed to Leaf (Newell) (one copy for the desk of each teacher of the fifth and sixth classes).

First Classes. — Physiography — Longmans & Co. — (copies for teachers' desks). Hill's Foundations of Rhetoric (one copy for the desk of each teacher). Tilden's Commercial Geography (one copy for the desk of each teacher). A Pathfinder in American History (Goody & Twitchell) (one copy for the desk of each teacher).

Second Classes. — Harper's Cyclopædia of United States History. Physiography — Longmans & Co. — (copies for teachers' desks).

Maps and Globes. — Cutter's Physiological Charts. Charts of the human body (Milton Bradley & Co.). White's Manikin. Cornell's Series Maps *or* Guyot's Series Maps, Nos.

1, 2, 3 (not exceeding one set to each floor). Hughes's Series of Maps. Joslyn's 15-inch Terrestrial Globe, on Tripod (one for each Grammar School). 9-inch Hand Globe, Loring's Magnetic (one for each Grammar-School room). Cosmograph. O. W. Gray & Son's Atlas (to be furnished as new atlases are needed). Rand & McNally's Indexed Atlas of the World. Atlas of Massachusetts (George H. Walker & Co.).

HIGH SCHOOLS.

For use in each class-room where history is taught: Sanderson's Epitome of the World's History. Labberton's Historical Atlas and General History. Tillinghast's Ploetz's Epitome of Ancient, Mediæval, and Modern History. Adams's Manual of Historical Literature. Fisher's Outlines of Universal History. McCarthy's History of the World.

Hill's Our English (for use on teachers' desks). Bloxham's Chemistry. Remsen's Chemistry, Advanced Course. Richter's Chemistry, Inorganic (Smith's Translation). Sadtler's Industrial Organic Chemistry.

LATIN AND HIGH SCHOOLS.

Lingard's History of England. Harper's Latin Lexicon. Liddell & Scott's Greek Lexicon, unabridged. Eugène's French Grammar. Labberton's Historical Atlas and General History (one book for the desk of each teacher). Guyot's and Cameron's Maps of the Roman Empire, Greece, and Italy. Strang's English Lessons (for use on teachers' desks). Reclus's Bird's-Eye View of the World. Enebuske's Progressive Gymnastic Day's Orders (one copy for the desk of each teacher).

NORMAL SCHOOL.

Observation Lessons in Primary Schools (Hopkins) (one set). Enebuske's Progressive Gymnastic Day's Orders (one copy for the desk of each teacher). Quick's Educational Reformers.

NORMAL AND HIGH SCHOOLS.

Charts of Life. Wilson's Human Anatomical and Physiological Charts. Hough's American Woods.

BOOKS FOR SUPPLEMENTARY READING.

BOYS' LATIN SCHOOL.

[45 copies of each book.]

Moss's First Greek Reader. Homer's Iliad, Books XIII.–XXIV. (Trübner Edition). Tomlinson's Latin for Sight Reading. Walford's Extracts from Cicero, Part I. Jackson's Manual of Astronomical Geography. Ritchie's Fabulæ Faciles. Cæsar's Civil War. Eutropius. The Children's Life of Abraham Lincoln (M. Louise Putnam).

GIRLS' LATIN SCHOOL.

Sheldon's Greek and Roman History. Ritchie's Fabulæ Faciles. The Children's Life of Abraham Lincoln (M. Louise Putnam). Cæsar's Civil War.

LATIN AND HIGH SCHOOLS.

Books required for admission to Harvard College.

A list of suitable books, carefully prepared under the direction of the Committee on Text-Books, is presented to the Board for adoption. After this list has been adopted, a master may make requisition on the Committee on Supplies for one set (of not more than thirty-five copies) of a book. This committee, after the approval of the Committee on Text-Books has been obtained, will purchase the books and send them to the school for permanent use. No book will be purchased until called for in the manner described.

Sets of not more than thirty-five copies — less when the classes are small — are to be purchased for the Latin and High Schools, except the Dorchester High School, which is otherwise provided for. One set is to be allowed for three class-rooms. An extra set is to be allowed for use in more than three and less than six class-rooms in one school; and so on in that ratio.

English. — Barnes's History of Ancient Peoples; Church's Stories from the East, from Herodotus; Church's Story of the Persian War, from Herodotus; Church's Stories from the Greek Tragedians; Kinsley's Greek Heroes; Abbott's Lives of Cyrus and Alexander; Froude's Cæsar; Forsythe's Life of Cicero; Ware's Aurelian; Cox's Crusades; Masson's Abridgment of Guizot's History of France; Scott's Abbot; Scott's Monastery; Scott's Marmion (Rolfe's Student Series); Scott's Lay of the

Last Minstrel (Rolfe's Student Series); Kingsley's Hereward; Kingsley's Westward Ho! Melville's Holmby House; Macaulay's Essay on Frederic; Macaulay's Essay on Clive; Macaulay's Essay on Dr. Johnson; Motley's Essay on Peter the Great; Thackeray's The Virginians; Thackeray's The Four Georges; Dickens's Tales of Two Cities; Irving's Alhambra; Irving's Bracebridge Hall; Miss Buckley's Life and Her Children; Miss Buckley's Winners in Life's Race; Bulfinch's Age of Fable (revised edition); Bulfinch's Age of Chivalry; Bulfinch's Legends of Charlemagne; The Boy's Froissart; Ballads and Lyrics; Vicar of Wakefield; Essays of Elia; Tennyson's Elaine; Tennyson's In Memoriam; Byron's Prisoner of Chillon; Goldsmith's Deserted Village; Goldsmith's Traveller; Coleridge's Ancient Mariner; Wordsworth's Excursion; Monroe's Sixth Reader; Webster — Section 2 [Annotated English Classics, Ginn & Co.]; Wordsworth's Poems — Section 2 [Annotated English Classics, Ginn & Co.]; Sheldon's Greek and Roman History; Monroe's Fifth Reader (old edition); The Students' Series of English Classics [Leach, Shewell, & Sanborn]; Newell's A Reader in Botany, Part I.

Latin. — Gradatim for sight reading [Ginn & Co.].

French. — St. German's Pour une Épingle; Achard's Le Clos Pommier; Feuillet's Roman d'un Homme Pauvre; Dumas's La Tulipe Noire; Vigny's Cinq Mars; Lacombe's La Petite Histoire du Peuple Français.

German. — Andersen's Märchen; Simmondson's Balladenbuch; Krummacher's Parabeln; Goethe's Iphigenie auf Tauris; Goethe's Prose; Schiller's Jungfrau von Orleans; Schiller's Prose; Boisen's German Prose; Bernhardt's Novellen Bibliothek.

GRAMMAR SCHOOLS.

PERMANENT SUPPLEMENTARY READING.

One set for three class-rooms. An extra set allowed whenever a book is assigned for use in more than three and less than six class-rooms; and so on in that ratio.

It is to be understood that hereafter, when Hooker's Child's Book of Nature is to be purchased and furnished to schools, it shall be bound in parts.

It is to be understood that hereafter, when Guyot's Introduction to Geography is to be replaced with new books, Scribner's Geographical Reader shall be furnished.

It is understood that copies of Early England, Harper's Half-Hour Series, and six stories from Arabian Nights, now in stock, are to be used, but that no more copies are to be purchased.

CLASS VI.

60 copies for a set. — Seven Little Sisters, first half-year. Hooker's Child's Book of Nature; those chapters of Parts I. and II. which will supplement properly the observational studies of plants and animals, and those chapters of Part III., on air, water, and heat, which will aid the instruction in Geography. Our World

Reader, No. 1. [1] Our World, No. 1; the reading to be kept parallel with the instruction in geography through the year. Poetry for Children; selections appropriate for reading and recitation. Stories of American History; for practice in reading at sight, and for material for language lessons. *30 copies for a set.* — Wood's Natural History Reader, No. 3; Hale's Stories for Children.

CLASS V.

60 copies for a set. — Each and All, second half-year. This is simple, interesting class-reading, which will aid the geography, and furnish material for both oral and written language lessons. Guyot's Introduction to Geography; the reading to be kept parallel with the instruction in Geography through the year. Hooker's Child's Book of Nature, and Poetry for Children; as in Class VI. Robinson Crusoe. *30 copies for a set.* — Frye's Books and Brook Basins. Wood's Natural History Readers, Nos. 4 and 5. American History Stories, Vol IV. [Mara L. Pratt]; Hale's Stories for Children.

CLASS IV.

60 copies for a set. — Hooker's Child's Book of Nature, and Poetry for Children; as in Classes VI. and V. Readings from Nature's Book (revised edition). Robinson Crusoe. *30 copies for a set.* — King's Geographical Reader, No. 2. Wood's Natural History Reader, No. 6. Eggleston's A First Book in American History.

CLASS III.

60 copies for a set. — Hooker's Child's Book of Nature; as supplementary to oral lessons. American Poems, with Biographical Sketches and Notes; appropriate selections therefrom.

CLASS II.

60 copies for a set. — Selections from American authors; as in part collateral to the United States History. American Poems; appropriate selections therefrom. *30 copies for a set.* — Ball's Starland; Fiske's War of Independence.

CLASS I.

60 copies for a set. — Selections from American authors. Early England — Harper's Half-Hour Series, Nos. 6 and 14. American Poems; selections therefrom. *10 copies for a set.* — Green's Readings from English History. *30 copies for a set.* — Philips's Historical Readers, Nos. 1, 2, 3, 4. Geikie's Elements of Physical Geography; Dole's American Citizen; Ball's Starland.

[1] No more copies of Our World, No. 1, to be purchased.

ANY CLASS.

60 copies for a set. — Six Stories from the Arabian Nights. Jackson's Manual of Astronomical Geography; one set of 60 copies to be supplied to each Grammar School.

CIRCULATING LIBRARY PLAN FOR GRAMMAR SCHOOLS.

The object of the plan is not only to aid pupils to cultivate a taste for good and wholesome reading, but, by furnishing them with good books for home reading, to provide additional material for their work in composition and the study of English literature.

Sets of suitable books will be purchased, each set consisting of sixty books.

The sets will be distributed among the first eight school divisions during the present year, — the ninth division being already well supplied with books for supplementary reading.

Each set will be put in a strong, well-made box, with handles; the boxes to be made for the purpose, each set exactly fitting its box; the division to which it belongs, and the kind of books it contains, to be marked upon each box.

A report card, upon which the principal shall note the condition of books when received, will accompany each set. The principal of the school shall receive the books, note on the report their condition, and see to the distribution in the classes.

The sets of books in each division will form a circulating library in that division, to be moved from school to school at stated periods by the regular supply team. The transfer of boxes will take place during the months of December and March.

[Sets of not more than sixty copies of one book.]

Zigzag Journeys in Europe (revised edition); Zigzag Journeys in the Orient (revised edition); Scudder's Boston Town; Drake's The Making of New England; Towle's Pizarro; Towle's Vasco da Gama; Towle's Magellan; Towle's Heroes and Martyrs of Invention; Fairy Land of Science; Hawthorne's True Stories; Higginson's Young Folks' Book of Explorers; Scott's Ivanhoe; Longfellow's Evangeline; Little Folks in Feathers and Fur; What Mr. Darwin Saw in his Voyage around the World in the Ship Beagle; Muloch's A Noble Life; M. E. Dodge's Hans Brinker; Lambert's Robinson Crusoe; Lamb's Tales from Shakespeare (revised edition, Houghton, Mifflin, & Co.); Smiles's Robert Dick, Geologist and Botanist; Eyes Right; Alcott's Little Men; Alcott's Little Women; Scott's Kenilworth; Tom Brown's School-Days at Rugby; Abbott's Mary Queen of Scots; Abbott's Charles I.; Taylor's Boys of Other Countries; How Marjory Helped; Little People in Asia; Gilman's Magna Charta Stories; Overhead; Yonge's Lances of Linwood; Ten Boys Who Lived on the Road from Long Ago till Now; Scott's Tales of a Grandfather; Hayes's

Cast Away in the Cold; Sharp Eyes and other Papers; Lessons on Practical Subjects; Stories of Mother Nature; Play Days; Jackanapes; Children's Stories of American Progress; Little Lord Fauntleroy; Pilgrims and Puritans; Ballou's Footprints of Travel; The Crofton Boys; Black Beauty; The King of the Golden River; Water Babies; Hans Andersen's Fairy Tales — First and Second Series; The Lady of the Lake; Wright's Nature Readers, Nos. 1, 2, and 3; Tanglewood Tales; Wonder Book; Summer Holiday in Europe (Blake); Lost Jewel (Spofford); Hawthorne, American Classics for Schools (Houghton, Mifflin, & Co.); Lowell's Jason's Quest. Gods and Heroes (Francillon); The Nine Worlds (Litchfield); Twilight Thoughts (Claude); The Peasant and the Prince (Martineau); Ten Great Events in History (Johonnot's Series); Stories of Heroic Deeds (Johonnot's Series); Stories of our Country (Johonnot's Series); Grandfather's Tales (Johonnot's Series); Ethics of Success (Thayer).

PRIMARY SCHOOLS.

PERMANENT SUPPLEMENTARY READING.

One set for three class-rooms. An extra set allowed whenever a book is assigned for use in more than three and less than six class-rooms; and so on in that ratio. Not more than sixty copies for a set.

[1] Easy Steps for Little Feet. [1] Popular Tales — First and Second Series. Parker and Marvel's Supplementary Reading (First Book). Tweed's Graded Supplementary Reading. Modern Series Primary Reading, Part I. An Illustrated Primer (D. C. Heath & Co.). *Class 1.* — Scudder's Book of Fables.

CIRCULATING SUPPLEMENTARY READING.

[For Primary Schools and Ungraded Classes.]

Sets of books will be purchased, each set consisting of not more than thirty books.

The sets will be distributed among the nine school divisions.

Each set will be put into a strong, well-made box, with handles; the boxes to be made for the purpose, each set exactly fitting its box; the division to which it belongs, and the kind of books it contains, to be marked upon each box.

A report card, upon which the teacher shall note the condition of books when received, will accompany each set. The head teacher of the school shall receive the books, note on the report their condition, and see to their distribution in the classes.

Each book will be covered with cloth, and stamped "City property," with the date of its introduction into the schools.

[1] The books of the above titles in stock to be used, but no more copies to be purchased.

The sets of books in each division will form a circulating library in that division, to be moved from school to school by the boys of the first class, at stated periods, as directed. When practicable each division is to form one circuit; when not practicable, two or more circuits shall be formed.

For instance, the Third Division will consist of two circuits:

1. Somerset-st. School, Anderson-st. School, Phillips-st. School, Blossom-st. School, Poplar-st. School, Chardon-court School.

2. Cushman School, Sheafe-st. School, Snelling-pl. School, Charter-st. School, North Bennet-st. Ungraded Classes.

It will be seen that the distance between two schools is so short that the larger boys can easily carry the books; so that they will be conveyed from school to school without expense to the city.

The books shall be in the hands of pupils only when used under the immediate direction of the teacher. They are never to be used in copying or to be kept in the pupils' desks. A set of well-bound books will last from three to five years if properly used and handled.

In order to keep the supply sufficient to meet the wants of the schools, new sets may be duly approved and purchased each year, or sets may be replaced as the books are worn out.

[Sets of not more than thirty copies.]

First Readers. — Monroe's, Monroe's Advanced First, Appleton's, Harvey's, Eclectic, Sheldon's, Barnes's New National, Sheldon & Co.'s, Harper's, the Nursery Primer, Parker and Marvel's Supplementary Reading — Second Book: Wood's First Natural History Reader, Stickney's First Reader, Stickney's First Reader (new edition), McGuffey's Alternate First Reader, Interstate Primer and First Reader, Davis's Beginner's Book. The Riverside Primer and Reader (Houghton, Mifflin, & Co.); Cyr's The Children's First Reader; Hodgkin's Little People's Reader; The Normal Course in Reading.

Second Readers. — Monroe's, Monroe's Advanced Second, Appleton's, Harvey's, Interstate, Sheldon & Co.'s, Barnes's New National, Analytical, Swinton's New Normal, Stickney's Second Reader (new edition), Harper's, Easy Book (published by Shorey), Turner's Stories for Young Children, Our Little Ones, Golden Book of Choice Reading, When I was a Little Girl, Johonnot's Friends in Feathers and Fur, Woodward's Number Stories, Wood's Second Natural History Reader, Young Folk's Library, Nos. 5 and 6 (Silver, Burdett, & Co.), Davis's Second Reading Book, Book of Folk Stories. The Normal Course in Reading.

SCHOOL DOCUMENT NO. 12 — 1894.

SEMI-ANNUAL STATISTICS

OF THE

BOSTON PUBLIC SCHOOLS,

JUNE, 1894.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

SCHOOL CENSUS. — *May, 1894.*

Number of children in Boston between the ages of 5 and 15	76,139
Number reported as attending public schools	56,841
" " private schools	11,294

Whole number of different pupils registered in the public schools during the year 1893-94: Boys, 38,105; girls, 36,223; total, 74,328.

EXPENDITURES. — *1893-94.*

Salaries of instructors		$1,470,051 03
" officers		62,023 34
" janitors		114,512 85
Fuel, gas, and water		86,666 99
Supplies and incidentals:		
Books	$29,026 17	
Printing	7,070 16	
Stationery and drawing materials	13,293 06	
Miscellaneous items	38,501 58	
		87,890 97
School-house repairs, etc.		190,465 06
Expended from the appropriation		$2,011,610 24
" income of Gibson Fund		907 08
Total expenditure		$2,012,517 32
School-houses and lots		279,356 81
City Council, flag-staff		100 00
Total expenditures		$2,291,974 13

INCOME.

School Committee	$40,709 13	
City Council	10,300 00	
Total income		51,009 13
Net expenditures for public schools		$2,240,965 00

SUMMARY.

June 30, 1894.

General Schools.	No. Schools.	No. of Teachers.	Average No. Pupils Belonging.	Average Attendance.	Average Absence.	Per cent. of Attendance.	No. at date.
Normal	1	11	186	179	7	96.2	183
Latin and High	11	130	3,416	3,212	204	94.0	3,347
Grammar	55	768	32,144	29,376	2,768	91.4	31,008
Primary	499	499	26,567	23,005	3,562	86.6	26,398
Kindergartens	47	84	2,738	1,969	769	71.9	2,795
Totals	613	1,492	65,051	57,741	7,310	88.8	63,731

Special Schools.	No. Schools.	No. of Teachers.	Average No. Pupils Belonging.	Average Attendance.	Average Absence.	Per cent. of Attendance.	No. at date.
Horace Mann	1	12	97	84	13	86	110
Spectacle Island	1	1	18	15	3	....	20
Evening High	1	31	1,992	1,368	....	....	....
Evening Elementary	15	143	3,213	2,030	....	....	....
Evening Drawing	5	27	559	491	....	....	....
Totals	23	214	5,879	3,988	....	....	....

REGULAR TEACHERS.

Schools.	Teachers.		
	Males.	Females.	Total.
Normal School	2	7	9
Boys' Latin	18	.....	18
Girls' Latin	1	7	8
English High	23	.....	23
Girls' High	2	20	22
Roxbury High	3	11	14
Dorchester High	2	6	8
Charlestown High	2	5	7
West Roxbury High	2	3	5
Brighton High	1	3	4
East Boston High	2	3	5
Mechanic Arts High	6	.....	6
Grammar Schools	111	592	703
Primary Schools	.....	499	499
Kindergartens	.....	84	84
Totals	175	1,240	1,415

SPECIAL TEACHERS.

Schools.	Males.	Females.	Total.
Horace Mann School	. . . . .	12	12
Evening Schools	68	106	174
Evening Drawing Schools	22	5	27
French and German: High Schools	3	. . . . .	3
Music: High, Grammar, and Primary Schools	5	4	9
Kindergarten Methods: Normal School	. . . . .	2	2
Drawing: High and Grammar Schools	2	. . . . .	2
Physical Training	2	. . . . .	2
Sewing	. . . .	31	31
Chemistry: Girls' High School	. . . . .	1	1
Laboratory Assistant: Girls' High School	. . . .	1	1
Laboratory Assistant: Roxbury High School	1	. . . . .	1
Vocal and Physical Culture: Girls' High School	. . . . .	1	1
Vocal and Physical Culture: Girls' Latin School	. . . . .	1	1
Military Drill: High Schools	1	. . . . .	1
Manual Training Schools	3	9	12
Cooking Schools	. . . . .	10	10
Spectacle Island	1	. . . . .	1
Totals	108	183	291

NORMAL AND HIGH SCHOOLS.

Semi-Annual Returns to January 31, 1894.

Schools.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Head-Masters.	Masters.	Junior-Masters.	Sub-Masters.	Asst. Principals.	First Assistants.	Second Asts.	Assistants.	Instructors.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.											
Normal	. . .	186	186	. .	179	179	7	96	1	. .	.	1	. .	2	5	. .	.
Latin	496	. . .	496	477	. . .	477	19	96	1	9	8	.	. .	.	.	.	.
Girls' Latin	. . .	213	213	. . .	198	198	15	93	.	1	.	.	.	.	.	7	.
English High	674	. . .	674	641	. . .	641	33	95	1	7	15	.	.	.	.	.	.
Girls' High	. . .	679	679	624	. . .	624	55	92	1	1	. .	1	1	.	.	18	.
Roxbury High	164	316	480	155	294	449	31	94	1	1	1	.	. .	.	.	11	.
Dorchester High	75	139	214	71	128	199	15	93	.	1	1	.	. .	.	.	6	.
Charlestown High	44	125	169	42	117	159	10	94	1	.	1	.	.	.	.	5	.
West Roxbury High	43	79	122	41	74	115	7	94	.	1	1	.	.	.	.	3	.
Brighton High	35	55	90	33	53	86	4	96	.	1	.	.	.	.	.	3	.
East Boston High	33	71	104	31	65	96	8	92	.	1	1	.	.	.	.	3	.
Mechanic Arts High	175	. . .	175	168	. .	168	7	96	1	.	2	.	.	.	.	.	3
Totals	1,739	1,863	3,602	2,283	1,108	3,391	211	94.	7	23	30	1	1	3	5	56	3

EVENING SCHOOLS.

October, 1893—March, 1894.

Schools.	Number of Sessions.	Whole No. Registered.	Average No. Belonging.	Average Attendance.			Av. No. Teachers, including Principal.	Av. No. Pupils to a Teacher, exc. Principal, per Evening.
				Males.	Females.	Total.		
High	106	2,161	1,701	656	514	1,170	22	28
High, Ch'n Branch	65	504	207	83	59	142	6	24
High, E.B. Branch	62	148	84	37	19	56	3	22
Bigelow School, S.B.	107	416	213	98	64	162	13	15
Brighton School	107	146	66	34	5	39	3	25
Comins School, Rox.	107	393	220	122	44	166	12	15
Dearborn School, Rox.	107	501	172	73	38	111	9	13
Eliot School	107	579	249	146	36	182	14	15
Franklin School	107	725	613	194	167	361	21	18
Hancock School	107	687	409	112	63	175	12	17
Lincoln School, S.B.	107	177	111	49	29	78	6	15
Lyman School, E.B.	107	324	198	69	39	108	8	14
Phillips School	107	224	122	51	22	73	5	15
Quincy School	107	320	157	79	33	112	8	15
Sherwin School, Rox.	107	203	128	72	16	88	6	17
Warren School, Ch'n	107	410	180	88	33	121	9	16
Warrenton Street	67	130	86	27	34	61	4	21
Wells School	107	565	289	114	79	193	13	15
Totals	...	8,613	5,205	2,104	1,294	3,398	174	22.

EVENING DRAWING SCHOOLS.

Schools.	Number of Sessions.	Whole No. Registered.	Average No. Belonging.	Average Attendance.			Av. No. Teachers, including Principal.	Av. No. Pupils to a Teacher, exc. Principal.
				Males.	Females.	Total.		
Charlestown	66	194	115	75	21	96	7	16
East Boston	66	140	85	53	8	61	4	20
Roxbury	66	147	80	54	8	62	4	20
Tennyson Street	66	299	176	131	1	132	7	22
Warren Avenue	66	210	103	56	26	82	5	20
Totals		990	559	369	64	433	27	19

NORMAL, LATIN, AND HIGH SCHOOLS, CLASSIFICATIONS AND AGES, JUNE 30, 1894.

Schools.	First-year class.	Second-year class.	Third-year class.	Fourth-year class.	Fifth-year class.	Sixth-year class.	Out-of-course class.	Whole number at date.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.	19 years.	20 years.	21 years and over.
Normal	65	70	48	...	...	...	...	183	...	...	...	...	...	...	1	14	31	49	88
Latin	129	69	107	72	55	35	126	593	3	26	58	106	130	120	89	42	14	7	4
Girls' Latin	31	35	48	33	22	13	25	207	1	6	25	29	36	40	35	18	12	3	2
English High	211	222	168	44	...	...	...	645	...	...	6	38	97	172	182	93	41	12	4
Girls' High	307	134	128	72	...	...	...	641	...	...	1	24	99	167	152	113	53	24	8
Roxbury High	161	132	121	27	...	...	...	441	...	...	3	16	56	107	123	110	25	1	...
Dorchester High	66	70	49	12	...	...	...	197	...	...	...	12	31	48	58	31	15	2	...
Charlestown High	63	35	45	15	...	...	...	158	...	...	...	4	30	42	36	26	15	4	1
West Roxbury High	39	49	32	...	...	...	...	120	...	...	...	1	11	23	40	24	20	1	...
Brighton High	21	26	43	...	...	...	..	90	...	...	...	4	24	23	22	9	6	1	1
East Boston High	30	36	31	...	...	...	...	97	...	...	...	5	8	19	31	23	11	...	...
Mechanic Arts High	158	...	...	...	...	...	...	158	...	...	...	9	50	62	27	8	2	...	...
Totals	1,281	878	820	275	77	48	151	3,530	4	32	93	242	572	823	796	511	245	104	108

NORMAL AND HIGH SCHOOLS.

Number of Pupils to a Teacher, excluding Principals, June 30, 1894.

Schools.	No. of Reg. Teachers.	Average No. of Pupils.	Average No. of Pupils to a Regular Teacher.
Normal	8	186	23.2
Latin	17	496	28.6
Girls' Latin	7	213	30.4
English High	22	674	30.6
Girls' High	21	679	32.3
Roxbury High	13	480	36.9
Dorchester High	7	214	30.6
Charlestown High	6	169	28.2
West Roxbury High	4	122	30.5
Brighton High	3	90	30 0
East Boston High	4	104	26.0
Mechanic Arts High	5	175	35.0
Totals	117	3,602	30.8

Graduates, June, 1894.

Schools.	Regular Course.	Four Years' Course.	Totals.
Latin	30		30
Girls' Latin	13		13
English High	142	12	154
Girls' High	120	60	180
Roxbury High	118	27	145
Dorchester High	43	5	48
Charlestown High	43	12	55
West Roxbury High	28		28
Brighton High	21		21
East Boston High	31		31
Mechanic Arts High			
Totals	589	116	705

GRAMMAR SCHOOLS.

Semi-Annual Returns to June 30, 1894.

Schools.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Sub-Masters.	1st Assistants.	2d Assistants.	3d Assistants.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.							
Adams	197	179	376	180	163	343	33	90	1	1	1	1	6
Agassiz	481	. . .	481	445	. . .	445	36	93	1	1	1	1	7
Bennett	259	249	508	246	234	480	28	95	1	2	1	.	7
Bigelow	794	. . .	794	723	. . .	723	71	90	1	2	1	2	10
Bowditch	. . .	458	458	. . .	425	425	33	93	1	.	2	1	6
Bowdoin	. . .	380	380	. . .	331	331	49	87	1	.	2	1	7
Brimmer	605	. . .	605	546	. . .	546	59	91	1	2	1	1	8
Bunker Hill	232	226	458	212	210	422	36	92	1	1	2	2	8
Chapman	336	310	646	308	280	588	58	91	1	1	2	2	7
Charles Sumner	371	347	718	341	317	658	60	92	1	1	2	2	8
Comins	276	277	553	253	247	500	53	90	1	1	2	1	6
Dearborn	366	258	624	341	232	573	51	91	1	1	2	1	9
Dillaway	. . .	644	644	. . .	580	580	64	90	1	.	2	3	7
Dudley	644	. . .	644	606	. . .	606	38	94	1	2	1	1	9
Dwight	647	. . .	647	597	. . .	597	50	92	1	2	1	1	9
Edward Everett	315	343	658	289	306	595	63	90	1	1	2	2	7
Eliot	994	. . .	994	896	. . .	896	98	90	1	3	1	1	17
Emerson	384	345	729	353	318	671	58	92	1	1	2	2	10
Everett	. . .	705	705	. . .	633	633	72	90	1	.	2	3	9
Franklin	. . .	644	644	. . .	585	585	59	91	1	.	2	3	8
Frothingham	302	323	625	275	294	569	56	91	1	1	2	2	7
Gaston	. . .	734	734	. . .	653	653	81	89	1	.	2	3	8
George Putnam	166	199	365	156	180	336	29	93	1	1	1	1	4
Gibson	207	214	421	194	197	391	30	93	1	1	1	1	5
Hancock	. . .	716	716	. . .	652	652	64	91	1	.	2	2	11
Harris	177	186	363	164	170	334	29	92	1	.	2	.	6
Harvard	307	324	631	291	298	589	42	94	1	1	2	2	8

GRAMMAR SCHOOLS. — *Concluded.*

Schools.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Sub-Masters.	1st Assistants.	2d Assistants.	3d Assistants.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.							
Henry L. Pierce	359	330	689	337	302	639	50	93	1	1	2	2	8
Hugh O'Brien	456	326	782	427	303	730	52	93	1	1	2	2	9
Hyde		617	617		549	549	68	89	1		2	2	8
John A. Andrew	352	340	692	325	306	631	61	91	1	1	2	2	9
Lawrence	785		785	751		751	34	96	1	3	1	1	11
Lewis	348	387	735	329	357	686	49	93	1	1	2	2	9
Lincoln	563		563	510		510	53	91	1	2	1	1	7
Lowell	400	381	781	372	349	721	60	92	1	1	2	2	9
Lyman	335	169	504	315	156	471	33	93	1	1	2	2	6
Martin	187	161	348	170	146	316	32	91	1	1	1	2	4
Mather	364	331	695	336	293	629	66	90	1	1	2	2	8
Minot	155	151	306	147	138	285	21	93	1		1	1	5
Norcross		647	647		588	588	59	91	1		2	3	9
Phillips	876		876	800		800	76	91	1	3	1	1	13
Prescott	224	213	437	206	191	397	40	91	1	1	1	1	6
Prince	206	287	493	195	264	459	34	93	1	1	1	1	7
Quincy	568		568	495		495	73	87	1	2	1	1	7
Rice	472		472	430		430	42	91	1	2	1	6	2
Robert G. Shaw	146	130	276	139	123	262	14	95		1	1	1	5
Sherwin	535		535	489		489	46	92	1	2	1	1	7
Shurtleff		651	651		569	569	82	88	1		2	3	8
Stoughton	116	172	288	107	155	262	26	91	1		1		5
Thomas N. Hart	452		452	421		421	31	93	1	1	1	1	6
Tileston	62	75	137	58	67	125	12	92		1			3
Warren	321	329	650	299	308	607	43	93	1	1	2	2	8
Washington Allston	385	416	801	346	379	725	76	90	1	1	2	2	9
Wells		577	577		516	516	61	89	1		2	1	9
Winthrop		666	666		592	592	74	89	1		2	4	8
Totals	16,727	15,417	32,144	15,420	13,956	29,376	2,768	91.4	53	55	85	91	419

GRAMMAR SCHOOLS.

Number of Pupils in each Class, Whole Number, and Ages, June 30, 1894.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class	Sixth Class.	Ungraded Class.	Whole number.	Under eight years.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years.	Fourteen years.	Fifteen years.	Sixteen years.	Seventeen years.	Eighteen years and over.
Adams	25	38	70	48	88	59	32	360	. . .	3	24	41	64	57	71	65	22	9	4	. . .
Agassiz	38	45	46	109	105	116	. . .	461	. . .	2	27	63	81	83	88	53	39	19	5	1
Bennett	79	52	76	91	106	107	. . .	511	. . .	8	27	54	83	80	83	88	59	25	3	1
Bigelow	53	96	102	158	106	256	. . .	771	1	20	83	110	137	137	144	82	43	11	3	. . .
Bowditch	37	43	95	110	101	62	. . .	448	. . .	3	28	57	74	68	86	72	34	19	6	1
Bowdoin	32	34	65	36	77	82	35	361	. . .	. . .	17	42	53	52	72	52	38	27	8	. . .
Brimmer	36	49	92	101	102	129	39	548	. . .	3	46	77	109	94	98	59	40	17	3	2
Bunker Hill	46	55	60	77	88	88	19	433	. . .	6	21	63	59	76	82	71	32	15	8	. . .
Chapman	50	100	140	104	120	113	. . .	627	1	9	44	79	89	107	107	81	65	29	14	2
Charles Sumner	81	71	101	133	154	159	. . .	699	. . .	5	49	111	111	135	102	101	51	22	9	3
Comins	47	78	82	98	107	112	23	547	1	5	33	66	93	108	112	77	38	9	5	. . .
Dearborn	41	72	85	92	134	169	. . .	593	1	2	25	68	93	142	117	87	35	22	1	. . .
Dillaway	61	83	98	115	126	136	. . .	619	1	7	33	82	92	111	93	99	61	28	11	1
Dudley	46	85	85	103	99	132	64	614	. . .	. . .	24	73	101	118	100	84	60	39	13	2
Dwight	51	93	97	143	104	102	29	619	. . .	7	34	63	104	99	110	94	70	32	6	. . .
Edward Everett	58	92	101	127	142	115	. . .	635	. . .	5	37	90	87	104	73	99	70	50	14	6
Eliot	43	56	75	94	169	244	289	970	21	20	62	110	128	177	203	158	69	21	1	. . .
Emerson	48	79	79	139	167	161	26	699	. . .	3	33	77	111	119	125	114	65	39	11	2
Everett	78	95	96	141	107	114	31	662	. . .	7	40	79	99	103	123	97	69	31	9	5
Franklin	40	82	96	95	142	115	39	609	. . .	3	33	76	100	109	110	83	59	28	6	2
Frothingham	44	69	71	121	122	136	36	599	. . .	7	41	80	92	106	116	77	61	16	2	1
Gaston	46	90	100	148	140	181	. . .	705	. . .	7	54	95	88	144	122	98	55	30	12	. . .
George Putnam	24	41	51	53	82	110	. . .	361	. . .	1	19	37	61	73	70	45	37	13	1	4
Gibson	48	51	55	76	93	87	. . .	404	1	5	32	51	76	64	54	62	39	16	3	. . .

Hancock	28	35	50	92	104	218	160	687	1	14	57	83	126	150	129	72	42	10	3	...
Harris	42	45	58	58	69	72	...	344	...	4	8	37	54	56	67	58	40	17	2	1
Harvard	46	51	88	96	128	161	39	609	1	6	37	71	104	102	127	87	43	28	1	2
Henry L. Pierce	84	84	103	126	136	105	29	667	...	5	30	77	123	125	100	96	68	34	7	2
Hugh O'Brien	77	87	103	130	169	166	34	766	...	5	51	116	126	133	124	97	63	24	21	6
Hyde	51	73	91	96	133	92	33	569	...	4	32	67	91	106	96	89	64	9	10	1
John A. Andrew	42	48	86	137	163	162	47	685	...	2	51	86	133	136	118	90	40	23	6	...
Lawrence	91	73	88	143	137	178	36	746	1	19	59	118	137	142	119	99	38	14	...	...
Lewis	99	97	99	172	147	109	...	723	...	6	38	69	116	124	130	99	86	45	9	1
Lincoln	42	40	81	96	110	142	28	539	...	3	46	87	91	99	97	61	35	15	5	...
Lowell	52	91	106	173	162	177	...	761	...	5	76	115	167	133	118	86	41	18	2	...
Lyman	44	44	57	95	99	129	...	468	...	5	14	57	76	98	92	80	34	12	...	...
Martin	38	47	43	84	81	50	...	343	...	3	22	44	54	51	68	56	32	10	3	...
Mather	71	77	98	99	143	158	23	669	...	5	43	87	107	109	116	90	72	29	10	1
Minot	22	48	47	48	64	68	...	297	...	...	19	30	45	60	56	43	32	11	1	...
Norcross	39	78	76	103	222	153	...	671	...	20	55	98	110	113	137	81	39	16	2	...
Phillips	42	47	133	159	143	156	155	835	...	5	48	120	149	155	132	124	60	36	4	2
Prescott	53	48	71	82	107	89	...	450	...	...	24	45	83	80	98	62	33	22	3	...
Prince	76	78	75	110	66	98	...	503	...	...	26	42	84	90	84	62	55	41	16	3
Quincy	38	41	101	100	111	104	52	547	...	3	34	54	89	107	116	84	46	12	2	...
Rice	42	45	79	66	97	88	25	442	...	...	26	45	81	76	93	59	46	13	3	...
Robert G. Shaw	26	40	45	57	46	61	...	275	...	3	33	32	55	39	42	33	27	8	2	1
Sherwin	45	47	85	90	87	98	31	483	...	...	28	54	81	98	86	79	39	10	8	...
Shurtleff	58	55	83	193	102	141	...	632	1	16	58	72	90	119	111	85	48	25	6	1
Stoughton	30	40	44	54	54	58	...	280	...	1	21	30	43	52	50	47	27	6	3	...
Thomas N. Hart	35	49	74	94	80	110	...	442	...	6	35	47	77	90	77	47	28	17	..	...
Tileston	11	20	30	19	22	37	...	139	...	2	5	19	21	25	25	65	11	4	...	1
Warren	51	66	72	127	101	151	32	600	...	6	44	84	92	115	99	26	44	35	10	3
Washington Allston	56	123	133	150	152	123	49	786	...	11	65	101	115	147	131	78	80	19	8	...
Wells	31	39	43	69	111	126	133	552	...	9	47	80	115	101	87	64	39	9	1	...
Winthrop	63	83	99	91	147	159	...	642	...	12	46	72	118	110	102	103	43	29	10	2
Totals	2,672	3,488	4,461	5,721	6,274	6,824	1,568	31,008	31	318	2,044	3,883	5,133	5,607	5,488	4,352	2,606	1,170	316	60

DISTRIBUTION OF PUPILS IN RESPECT BOTH

	CLASSES.		Under 4 years.	4 years.	5 years.	6 years.	7 years.	8 years.	9 years.
Latin Schools.	All Classes	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Totals		. .	. .	. .	. .	. .	. .	. .
High Schools.	Advanced Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Third-year Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Second-year Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	First-year Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Totals		. .	. .	. .	. .	. .	. .	. .
Grammar Schools.	First Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Second Class	Boys	. .	. .	. .	. .	. .	. .	. .
		Girls	. .	. .	. .	. .	. .	. .	. .
	Third Class	Boys	. .	. .	. .	. .	. .	. .	1
		Girls	. .	. .	. .	. .	. .	. .	. .
	Fourth Class	Boys	. .	. .	. .	. .	. .	. .	8
		Girls	. .	. .	. .	. .	. .	1	10
	Fifth Class	Boys	. .	. .	. .	. .	. .	1	132
		Girls	. .	. .	. .	. .	. .	4	152
	Sixth Class	Boys	. .	. .	. .	. .	3	119	815
		Girls	. .	. .	. .	. .	5	147	766
	Ungraded Class	Boys	. .	. .	. .	. .	22	22	95
		Girls	. .	. .	. .	. .	1	24	65
	Totals		. .	. .	. .	. .	31	318	2,044
Primary Schools.	First Class	Boys	. .	. .	. .	. .	2	158	864	1,195
		Girls	. .	. .	. .	. .	. .	165	888	1,133
	Second Class	Boys	. .	. .	10	275	1,311	1,480	810
		Girls	. .	. .	4	238	1,203	1,234	659
	Third Class	Boys	. .	5	1,264	2,474	1,684	613	192
		Girls	. .	5	977	2,136	1,462	584	164
	Totals		. .	10	2,255	5,125	5,983	5,663	4,153
Kindergartens.	All Classes	Boys	84	501	628	161	14	. .	. .
		Girls	98	541	596	161	11	. .	. .
	Totals		182	1,042	1,224	322	25	. .	. .
			199	1,059	3,497	5,447	6,008	5,681	4,153

TO AGE AND TO CLASSES, JUNE, 1894.

10 years.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.	19 years and over.	Totals by Classes.
. .	3	26	58	100	130	120	89	42	25	593
. .	1	6	25	29	36	40	35	18	17	207
. .	4	32	83	129	166	160	124	60	42	800
. .	. .	. .	. .	. .	. .	4	6	22	27	59
. .	. .	. .	. .	. .	. .	. .	14	33	64	111
. .	. .	. .	. .	3	12	28	119	85	36	283
. .	. .	. .	. .	1	12	33	92	125	70	334
. .	. .	. .	. .	5	41	111	119	52	12	340
. .	. .	. .	. .	4	36	99	130	71	29	364
. .	. .	. .	9	60	148	170	79	14	5	485
. .	. .	. .	1	40	155	216	111	35	11	571
. .	. .	. .	10	113	446	662	671	447	247	2,644
. .	. .	12	131	473	497	256	66	14	.	1 259
. .	. .	4	95	304	462	364	137	25	.	1 113
. .	20	132	380	585	611	162	35	4	.	1 671
. .	6	99	417	617	444	164	62	12	.	1,817
7	151	524	733	544	247	69	3	.		2,474
8	113	462	677	550	254	63	21	1		2 137
161	563	904	736	452	. .	70				2 983
131	525	852	721	556	1.6	21	7	1		2,738
599	956	746	511	272	9	4	1			3 206
680	907	712	411	137	13	9	1			3 068
1,107	744	451	247	77	18	1				3 644
917	716	378	192	77	18	1				3 130
191	274	217	71	27	21	5	1			1 013
112	113	121	79	24	11	1	1			555
3,85.	7 [illegible]	5,0.7	3,4..	4,3..	2 [illegible]	. 7.	1,1.	67		41 [illegible]
7..	2.2	99	12							1 4.1
65.	2.2	. 1	12							1 2.3
4.7	54	24	7							4 30.
22.	77	2.	6							3 1.2
..	..	1	.							. . 14
..	..	1	2							2.42.
2 .7	7..	2..	.7							2. .3.
										.3..
										. .7
.	.	.	.							2.7..

GRAMMAR SCHOOLS.

Number of Pupils to a Teacher, excluding Principals, June, 1894.*

Schools.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.	Schools.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.
Adams	9	376	41.8	Hyde	12	617	51.4
Agassiz	10	481	48.1	J. A. Andrew,	14	692	49.4
Bennett	10	509	59.0	Lawrence ...	16	785	49.1
Bigelow	15	794	52.9	Lewis	14	735	52.5
Bowditch ...	9	458	50.9	Lincoln	11	563	51.2
Bowdoin	10	380	38.0	Lowell	14	781	55.8
Brimmer	12	605	50.4	Lyman	11	504	45.8
Bunker Hill .	13	458	35.2	Martin	8	348	43.5
Chapman...	12	646	53.8	Mather.....	13	695	53.5
Chas. Sumner	13	718	55.2	Minot	7	306	43.7
Comins	10	553	55.3	Norcross	14	647	46.2
Dearborn....	13	624	48.0	Phillips	18	876	48.7
Dillaway	12	644	53.7	Prescott.. .	9	437	48.6
Dudley.....	13	644	49.5	Prince	10	493	49.3
Dwight.	13	647	49.8	Quincy	11	568	51.6
Edw. Everett	12	658	54.8	Rice	11	472	42.9
Eliot	22	994	45.2	Robt. G. Shaw	7	276	39.4
Emerson	15	729	48.6	Sherwin.....	11	535	48.6
Everett	14	705	50.4	Shurtleff	13	651	50.1
Franklin	13	644	49.5	Stoughton ..	6	288	48.0
Frothingham	12	625	52.1	Thos. N. Hart	9	452	50.2
Gaston	13	734	56.5	Tileston . ..	3	137	45.7
Geo. Putnam,	7	365	52.1	Warren	13	650	50.0
Gibson	8	421	52.6	Washington Allston	14	801	57.2
Hancock	15	716	47.7	Wells	12	577	48.1
Harris	8	363	45.4	Winthrop ...	14	666	47.6
Harvard.....	13	631	48.5				
H. L. Pierce.	13	689	53.0	Totals	648	32,144	49.6
Hugh O'Brien	14	782	55.9				

GRAMMAR SCHOOLS.

Graduates. June, 1894.

Schools.	Boys.	Girls.	Total.	Schools.	Boys.	Girls.	Total.
Adams	11	12	23	Hugh O'Brien	33	38	71
Agassiz	37	..	37	Hyde	..	49	49
Bennett	28	51	79	John A. Andrew	10	32	42
Bigelow	49	..	49	Lawrence	88	..	88
Bowditch	..	37	37	Lewis	30	59	98
Bowdoin	..	31	31	Lincoln	39	..	39
Brimmer	36	..	36	Lowell	21	31	52
Bunker Hill	22	24	46	Lyman	30	14	44
Chapman	18	31	49	Martin	15	17	32
Charles Sumner	30	40	70	Mather	31	39	70
Comins	22	25	47	Minot	12	9	21
Dearborn	17	24	41	Norcross	..	34	34
Dillaway	..	49	49	Phillips	41	..	41
Dudley	45	.	45	Prescott	16	37	53
Dwight	51	..	51	Prince	28	48	76
Edward Everett	28	30	58	Quincy	36	..	36
Eliot	43	..	43	Rice	41	..	41
Emerson	25	23	48	Robert G. Shaw	10	14	24
Everett	..	76	76	Sherwin	42	..	42
Franklin	..	38	38	Shurtleff	..	58	58
Frothingham	18	26	44	Stoughton	14	16	30
Gaston	..	45	45	Thomas N. Hart	35	..	35
George Putnam	8	14	22	Tileston	2	7	9
Gibson	18	24	42	Warren	19	34	53
Hancock	..	28	28	Washington Allston	20	34	54
Harris	18	24	42	Wells	..	31	31
Harvard	26	20	46	Winthrop	..	58	58
Henry L. Pierce	49	36	85	Totals	1223	1,365	2,588

TABLE SHOWING THE NUMBER OF YEARS THE DIPLOMA GRADUATES OF 1894 BELONGED TO A GRAMMAR SCHOOL IN THIS CITY.

Schools.	2 years or less.	3 years.	4 years.	4½ years.	5 years.	5½ years.	6 years.	6½ years.	7 years.	7½ years.	8 years.	8½ years.	9 years and over.	Not given.	Total.
Adams	1				4	1	14		3						23
Agassiz	3	1		1	11		13	1	7						37
Bennett	4	2	1		7	5	11	21	21	6	1				79
Bigelow		1	1	2	5		23	2	14		1				49
Bowditch	3		1	1	2	3	14		11		2				37
Bowdoin	3	2			6	2	9	1	7				1		31
Brimmer			1		3	2	12	3	9	1	3	1	1		36
Bunker Hill	1				3	2	29		11						46
Chapman	1	1				4	10		14	6	10		3		49
Charles Sumner	6	2	2	1	3	5	29		14	1	7				70
Comins	2	1	1	1	13	3	20	1	2		3				47
Dearborn	1				6	2	26	1	5						41
Dillaway		1	1		3	2	26	1	11		4				49
Dudley	1	2	1		5	2	20		9	1	3		1		45
Dwight	5	1	2		5	3	9	2	18		6				51
Edward Everett	5	1	2	2	9	1	24		9		5				58
Eliot			5		8	11	10	3	4		2				43
Emerson	2	3	1		2	2	18	1	14	1	3		1		48
Everett	7	4			2	8	34	1	13		4	1	2		76
Franklin	3	2		2	1	6	5	5	6		7		1		38
Frothingham	1		1		1	3	27		11						44
Gaston	1	2	1		3	1	20		15		2				45
George Putnam	2	2	1		2		9		5		1				22
Gibson	3		1		3	6	21	1	6		1				42
Hancock			2		3	1	12	3	6		1				28
Harris	2	1			10		19		8		2				42
Harvard		1	1	1	4	9	16	4	7	1	2				46

TABLE SHOWING THE NUMBER OF YEARS THE DIPLOMA GRADUATES OF 1894 BELONGED TO A GRAMMAR SCHOOL IN THIS CITY. — *Concluded.*

Schools.	2 years or less.	3 years.	4 years.	4½ years.	5 years.	5½ years.	6 years.	6½ years.	7 years.	7½ years.	8 years.	8½ years.	9 years and over.	Not given.	Total.
Henry L. Pierce	5	6	1	...	17	4	32	2	13	...	4	...	1	...	85
Hugh O'Brien	4	2	2	1	22	4	26	1	9	...	...	...	...	...	71
Hyde	2	1	4	1	3	4	16	1	11	2	2	1	1	...	49
John A. Andrew	1	...	...	...	1	4	16	...	13	1	6	...	...	...	42
Lawrence	1	1	3	9	26	21	20	4	3	...	...	...	...	...	88
Lewis	6	3	3	...	17	5	51	...	13	...	...	...	...	...	98
Lincoln	1	1	...	...	1	1	25	...	9	...	1	...	...	...	39
Lowell	4	2	...	...	6	2	35	...	2	...	1	...	...	...	52
Lyman	5	...	...	...	2	13	17	1	5	...	1	...	...	...	44
Martin	4	...	1	...	8	...	15	...	3	...	1	...	...	...	32
Mather	7	2	2	...	3	...	28	1	21	...	5	...	1	...	70
Minot	...	...	...	...	...	...	16	...	4	...	1	...	...	...	21
Norcross	...	3	...	2	4	7	6	2	6	3	...	1	...	...	34
Phillips	5	2	2	...	5	1	20	...	6	...	...	...	...	...	41
Prescott	...	...	...	...	14	1	22	6	9	...	1	...	...	...	53
Prince	13	3	11	2	7	...	22	1	12	...	3	...	2	...	76
Quincy	1	...	1	1	2	5	13	6	5	1	1	...	...	...	36
Rice	3	3	6	1	4	...	19	1	4	...	...	...	...	...	41
Robert G. Shaw	...	1	...	...	2	...	17	...	4	...	...	...	...	...	24
Sherwin	...	3	1	1	5	2	18	1	4	1	2	3	1	...	42
Shurtleff	4	3	2	2	2	4	9	3	19	...	9	...	1	...	58
Stoughton	1	1	2	...	...	...	19	...	5	1	1	...	...	...	30
Thomas N. Hart	...	3	...	...	9	2	18	...	1	...	2	...	...	...	35
Tileston	...	...	...	...	...	...	3	3	1	...	2	...	...	...	9
Warren	1	3	1	1	1	2	20	...	16	...	8	...	...	...	53
Washington Allston	11	4	1	1	6	4	15	...	12	...	...	...	...	...	54
Wells	1	2	2	...	...	8	12	...	6	...	...	...	...	...	31
Winthrop	3	2	1	...	1	6	15	10	13	1	4	...	2	...	58
Totals	140	81	72	33	292	184	1025	94	489	27	125	7	19	...	2589

PRIMARY SCHOOLS.

Semi-annual Returns, to June 30, 1894.

Districts.	Teachers.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 years.	Over 8 years.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Adams	6	147	140	287	132	125	257	30	89	151	128	279
Agassiz	4	146	97	243	130	85	215	28	89	107	146	253
Bennett	7	188	173	361	166	146	312	49	87	202	168	370
Bigelow	12	353	282	635	302	231	533	102	84	320	301	621
Bowditch	10	270	269	539	232	229	461	78	86	285	259	544
Bowdoin	8	194	199	393	163	164	327	66	83	206	194	400
Brimmer	7	199	151	350	176	135	311	39	89	169	170	339
Bunker Hill	10	240	177	417	218	154	372	45	89	225	213	438
Chapman	6	196	169	365	171	143	314	51	86	200	179	379
Charles Sumner	11	336	293	629	295	248	543	86	86	345	310	655
Comins	6	144	123	267	128	108	236	31	88	130	137	267
Dearborn	15	457	337	794	399	282	681	113	86	352	432	784
Dillaway	9	238	236	474	205	194	399	75	84	249	221	470
Dudley	13	373	341	714	322	286	608	106	84	346	343	689
Dwight	10	276	281	557	242	241	483	74	87	289	264	553
Edward Everett	9	278	273	551	237	229	466	85	85	248	241	489
Eliot	9	319	192	511	279	162	441	70	86	324	196	520
Emerson	11	336	335	671	299	294	593	78	88	313	344	657
Everett	10	275	288	563	235	231	466	97	83	203	331	534
Franklin	12	322	315	637	281	272	553	84	86	334	307	641
Frothingham	9	269	219	488	239	188	427	61	88	270	224	494
Gaston	9	200	233	433	168	198	366	67	85	204	213	417
George Putnam	6	159	152	311	140	128	268	43	87	149	165	314
Gibson	6	188	171	359	164	149	313	46	87	199	184	383
Hancock	19	500	555	1,055	455	496	951	104	90	569	471	1,040
Harris	6	166	132	298	145	108	253	45	84	131	149	280
Harvard	12	316	301	617	283	261	544	73	89	296	306	602
Henry L. Pierce	7	188	186	374	172	162	334	40	90	166	205	371

PRIMARY SCHOOLS. — *Concluded.*

Districts.	Teachers.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 years.	Over 8 years.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Hugh O'Brien .	11	401	265	666	352	228	580	86	86	338	346	684
Hyde	9	214	213	427	192	190	382	45	89	222	255	477
John A. Andrew	12	322	330	652	280	280	560	92	86	259	389	648
Lawrence . . .	16	671	202	873	600	177	777	96	89	472	360	832
Lewis	10	235	265	500	206	221	427	73	86	219	287	506
Lincoln	7	249	102	351	210	80	290	61	83	190	161	351
Lowell	17	451	422	873	395	362	757	116	87	419	442	861
Lyman	9	294	212	506	271	187	458	48	90	238	247	485
Martin	4	117	93	210	101	77	178	32	85	118	93	211
Mather	12	338	333	671	286	266	552	119	82	356	306	662
Minot	4	102	104	206	87	86	173	33	84	110	99	209
Norcross . . .	13	176	412	588	160	361	521	67	88	336	266	602
Phillips	5	139	136	275	128	122	250	25	91	137	130	267
Prescott	7	213	183	396	183	157	340	56	86	233	183	416
Prince	7	167	147	314	147	119	266	48	85	146	188	334
Quincy	11	383	218	601	333	185	518	83	86	330	281	611
Rice	8	163	150	313	148	137	285	28	91	129	173	302
Robt. G. Shaw .	5	96	82	178	85	68	153	25	86	92	94	186
Sherwin	9	253	246	499	230	217	447	52	90	244	239	483
Shurtleff	6	167	184	351	142	154	296	55	84	188	149	337
Stoughton . . .	5	122	104	226	104	88	192	34	85	124	98	222
Thomas N. Hart	10	368	182	550	326	153	479	71	87	216	328	544
Tileston	2	46	37	83	40	31	71	12	86	37	49	86
Warren	7	170	193	363	153	168	321	42	88	212	162	374
Washington Allston . . .	10	330	304	634	280	255	535	99	84	337	291	628
Wells	18	561	475	1,036	489	406	895	141	87	537	438	975
Winthrop . . .	6	134	198	332	113	162	275	57	83	152	170	322
Totals . . .	499	14,155	12,412	26,567	12,419	10,586	23,005	3,562	86.6	13,363	13,035	26,398

PRIMARY SCHOOLS.

Number of Pupils in each Class, Whole Number, and Ages, June 30, 1894.

Districts.	First Class.	Second Class.	Third Class.	Whole Number.	Five years and under.	Six years.	Seven years.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years and over.
Adams	66	87	126	279	20	64	67	63	36	14	11	3	1
Agassiz	70	84	99	253	22	39	46	58	47	27	11	2	1
Bennett	78	108	184	370	31	76	95	76	52	27	5	5	3
Bigelow	164	192	265	621	43	148	129	148	81	41	24	2	5
Bowditch . . .	142	164	238	544	39	118	128	110	82	39	14	10	4
Bowdoin . . .	91	89	220	400	33	61	112	96	63	24	5	5	1
Brimmer . . .	96	100	143	339	28	64	77	61	71	26	6	5	1
Bunker Hill . .	104	135	199	438	49	75	101	88	63	39	17	5	1
Chapman . . .	114	111	154	379	26	91	83	88	61	19	8	3	. .
Chas. Sumner .	163	210	282	655	74	126	145	161	97	41	4	7	. .
Comins	77	78	112	267	13	54	63	46	48	28	9	4	2
Dearborn . . .	214	204	366	784	34	140	178	170	124	93	27	14	4
Dillaway . . .	105	143	222	470	58	88	103	96	84	28	12	1	. .
Dudley	145	196	348	689	80	127	139	129	100	67	32	12	3
Dwight	137	158	258	553	40	109	140	118	96	37	7	6	. .
Edward Everett,	133	161	195	489	40	100	108	109	78	35	10	5	4
Eliot	78	172	270	520	77	125	122	73	53	42	18	7	3
Emerson . . .	162	162	333	657	51	111	151	133	118	60	23	7	3
Everett	169	154	211	534	20	67	116	140	100	49	29	7	6
Franklin	134	196	311	641	75	131	128	120	105	54	21	4	3
Frothingham .	151	132	211	494	54	105	111	105	81	33	4	1	. .
Gaston	132	132	153	417	28	97	79	94	70	30	9	7	3
Geo. Putnam .	69	111	134	314	25	54	70	71	54	26	7	3	4
Gibson	110	106	167	383	39	69	91	94	61	23	3	2	1
Hancock . . .	228	272	542	1,040	95	252	222	197	117	115	30	11	1
Harris	86	84	110	280	18	54	59	54	51	35	8	1	. .
Harvard	140	203	259	602	49	116	131	135	101	45	19	5	1
Henry L. Pierce	139	119	113	371	16	58	92	87	70	34	11	2	1

PRIMARY SCHOOLS. — *Concluded.*

Districts.	First Class.	Second Class.	Third Class.	Whole Number.	Five years and under.	Six years.	Seven years.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years and over.
Hugh O'Brien,	173	208	303	684	58	138	142	139	122	58	23	2	2
Hyde	147	100	230	477	45	76	103	106	79	44	14	9	3
J. A. Andrew .	200	218	230	648	32	101	126	143	131	72	28	10	5
Lawrence . .	171	251	410	832	92	162	218	179	112	50	12	7	. .
Lewis	148	145	213	506	21	85	113	113	98	45	7	3	1
Lincoln . . .	81	109	161	351	38	73	79	80	47	27	5	3	1
Lowell	240	274	347	861	64	167	188	184	147	59	34	9	9
Lyman	97	167	221	485	47	88	103	84	70	46	31	10	6
Martin	45	58	108	211	23	40	55	42	25	16	8	1	1
Mather	183	159	320	662	41	130	185	158	93	36	15	3	1
Minot	46	47	116	209	20	49	41	41	38	12	5	2	1
Norcross . . .	137	235	230	602	78	128	130	125	78	41	11	8	3
Phillips . . .	53	103	111	267	32	52	53	60	35	18	11	6	. .
Prescott . . .	104	148	164	416	45	89	99	85	62	25	8	2	1
Prince	93	88	153	334	15	55	76	73	67	38	8	2	. .
Quincy	152	240	219	611	71	119	140	116	82	56	17	8	2
Rice	98	110	94	302	7	50	72	57	70	26	15	4	1
Robt. G. Shaw	44	63	79	186	14	37	41	48	32	10	3	1	. .
Sherwin . . .	102	193	188	483	54	89	101	92	83	39	18	5	2
Shurtleff . . .	102	108	127	337	35	69	84	80	51	12	4	. .	2
Stoughton . .	55	59	108	222	18	46	60	34	35	23	3	2	1
Thos. N. Hart,	168	174	202	544	18	83	115	165	89	45	16	9	4
Tileston . . .	19	27	40	86	6	12	19	23	13	9	3	1	. .
Warren . . .	110	98	166	374	40	73	90	93	52	13	3	1	. .
Washington Allston . .	137	167	324	628	41	132	164	140	85	34	17	9	6
Wells	194	267	514	975	100	217	220	188	144	74	28	4	. .
Winthrop . .	90	101	131	322	35	46	71	75	49	20	10	7	9
Totals . .	6,684	7,980	11,734	26,398	2,265	5,125	5,983	5,663	4,153	2,079	739	274	117

PRIMARY SCHOOLS.

Number of Pupils to a Teacher, June 30, 1894.

Districts.	No. of Teachers.	Av. whole No. of Pupils.	No. of Pupils to a Teacher.	Districts.	No. of Teachers.	Av. whole No. of Pupils.	No of Pupils to a Teacher.
Adams	6	287	47.8	Hyde	9	427	47.4
Agassiz	4	243	60.8	J. A. Andrew	12	652	54.3
Bennett	7	361	51.6	Lawrence	16	873	54.6
Bigelow	12	635	52.9	Lewis	10	500	50.0
Bowditch	10	539	53.9	Lincoln	7	351	50.1
Bowdoin	8	393	49.1	Lowell	17	873	51.4
Brimmer	7	350	50.0	Lyman	9	506	56.2
Bunker Hill	10	417	41.7	Martin	4	210	52.5
Chapman	6	365	60.8	Mather	12	671	55.9
Charles Sumner,	11	629	57.2	Minot	4	206	51.5
Comins	6	267	44.5	Norcross	13	588	45.2
Dearborn	15	794	52.9	Phillips	5	275	55.0
Dillaway	9	474	52.7	Prescott	7	396	56.6
Dudley	13	714	54.9	Prince	7	314	44.9
Dwight	10	557	55.7	Quincy	11	601	54.6
Edward Everett,	9	551	61.2	Rice	8	313	39.1
Eliot	9	511	56.8	Robert G. Shaw	5	178	35.6
Emerson	11	671	61.0	Sherwin	9	499	55.4
Everett	10	563	56.3	Shurtleff	6	351	58.5
Franklin	12	637	53.1	Stoughton	5	226	45.2
Frothingham	9	488	54.2	Thos. N. Hart	10	550	55.0
Gaston	9	433	48.1	Tileston	2	83	41.5
George Putnam,	6	311	51.8	Warren	7	363	51.9
Gibson	6	359	59.8	Washington Allston	10	634	63.4
Hancock	19	1,055	55.5	Wells	18	1,036	57.6
Harris	6	298	49.7	Winthrop	6	332	55.3
Harvard	12	617	51.4				
Henry L. Pierce	7	374	53.4	Totals	499	26,567	53.2
Hugh O'Brien	11	666	60.5				

KINDERGARTENS.

Semi-annual Returns to June 30, 1894.

Districts.	Teachers.	Average whole number.			Average Attendance.			Average absence.	Per cent. of attendance.	Age under 5 years.	Age 5 and over.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Adams	2	37	32	69	25	21	46	23	67	25	47	72
Bennett	2	26	35	61	16	19	35	26	56	30	34	64
Bowditch . . .	4	67	61	128	43	43	86	42	67	68	70	138
Bowdoin . . .	2	28	29	57	20	20	40	17	72	22	33	55
Brimmer . . .	2	25	26	51	18	20	38	13	74	36	24	60
Bunker Hill . .	2	30	28	58	21	18	39	19	67	32	28	60
Chapman . .	2	32	34	66	23	24	47	19	71	37	32	69
Comins	4	82	84	166	67	63	130	36	78	79	100	179
Dearborn . . .	2	35	24	59	27	15	42	17	73	9	49	58
Dillaway . . .	2	55	28	83	38	19	57	26	68	36	42	78
Dwight	3	49	58	107	36	42	78	29	73	45	50	95
Eliot	4	69	61	130	58	50	108	22	77	70	62	132
Emerson . . .	1	42	34	76	27	21	48	28	63	32	43	75
Everett	2	26	32	58	15	20	35	23	63	17	38	55
Franklin . . .	2	18	35	53	12	22	34	19	64	31	21	52
Geo. Putnam .	2	25	27	52	21	21	42	10	81	25	26	51
Hancock . . .	5	66	78	144	51	61	112	32	77	80	72	152
Harvard . . .	2	27	27	54	20	20	40	14	74	26	27	53
H. L. Pierce .	2	26	26	52	19	19	38	14	73	30	43	73
Hugh O'Brien .	1	33	15	48	19	7	26	22	54	10	44	54
Hyde	2	25	33	58	19	25	44	14	76	25	29	54
J. A. Andrew .	2	32	33	65	23	25	48	17	74	25	40	65
Lawrence . . .	2	29	35	64	21	26	47	17	73	5	62	67
Lewis	1	26	20	46	19	15	34	12	74	25	25	50
Lyman	2	33	31	64	20	18	38	26	59	33	9	42
Mather	2	31	34	65	22	22	44	21	67	17	43	60
Minot	2	30	28	58	19	20	39	19	67	22	37	59
Phillips	2	23	32	55	18	25	43	12	78	26	31	57
Prescott . . .	2	33	30	63	25	21	46	17	74	12	53	65
Prince	2	31	25	56	25	21	46	10	83	25	44	69
Quincy	2	30	36	66	21	23	44	22	66	30	34	64
Rice	2	30	24	54	24	18	42	12	77	11	43	54

KINDERGARTENS. — *Concluded.*

Semi-annual Returns to June 30, 1894.

Districts.	Teachers.	Average whole number.			Average attendance.			Average absence.	Per cent. of attendance.	Age, under 5 years.	Age, 5 and over.	Whole number at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Robert G. Shaw	1	18	23	41	10	16	26	15	63	27	18	45
Shurtleff . . .	2	26	32	58	20	24	44	14	74	6	44	50
Stoughton . .	2	30	36	66	23	28	51	15	77	42	30	72
Thos. N. Hart .	2	40	34	74	34	29	63	11	85	28	47	75
Washington Allston . . .	2	28	25	53	18	20	38	15	71	23	31	54
Wells	3	56	61	117	38	43	81	36	70	72	53	125
Winthrop . . .	1	24	19	43	17	13	30	13	69	18	25	43
Totals	84	1,373	1,365	2,738	992	977	1,969	769	71	1,583	1,212	2,795

SCHOOL DOCUMENT NO. 13—1894.

REPORT

OF THE

SPECIAL COMMITTEE

ON THE

INSTRUCTION IN PENMANSHIP IN THE PUBLIC SCHOOLS.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

In School Committee,
Boston, Oct. 9, 1894.

Ordered, That the Special Committee on Penmanship be authorized to report in print.

Attest:

PHINEAS BATES,
Secretary.

REPORT.

IN SCHOOL COMMITTEE, Oct. 23, 1894.

At the regular meeting of the Board, May 22 of the present year, on motion of Mr. Winship, it was ordered, "That a special committee of five be appointed by the President to consider and report upon the subject of the instruction in penmanship in the public schools, and that said committee report to the Board at an early date in the fall."

In conformity with the above order, the following report is submitted:

The purpose of our primary and grammar schools is to educate children to understand and meet the general needs of life and overcome the difficulties that are likely to be encountered.

The majority of children enter stores and offices where writing is one of the first requisites. In nearly every instance, where an individual is sought to fill an office, a specimen of writing by the applicant is first requested. It is the exception that a graduate from a grammar school can write such a clear, round hand as will gain the commendation of the business man.

During the past year much has been written favoring and opposing vertical writing. The articles in opposition have mainly been written by teachers of writing who have become well grounded in the slanting method, and feel that their long experience should be respected.

The true method of solving this problem is to study results.

An intricate machine may be praised for what it accom-

plishes. Its productions may satisfy the merchants, but the true test is in the effect upon the consumer. So it is in writing. Of two boys, one a proficient writer in the slanting method, and the other in the vertical, which will — all other things being equal — gain the better position?

The demand in the business world is for rapid and legible writing.

Ninety per cent. of the young men who apply for positions do not write satisfactorily.

The typical English style of writing is a round, legible, slanting hand, while that of the American of the present day displays the dash, spirit, and energy of our people, but is marred by its sprawling and occasionally unintelligible lines.

In considering this subject it is necessary to discover if the slanting method of writing adopted in our schools is best suited for the health of pupils, and of advantage in business life. The question naturally arises, When was it first introduced, and why has it been maintained to the present time?

Vertical chirography was almost invariably practised by the ancient Romans and during the Middle Ages. In the earlier practice of the Romans of a rapid or running style, the characters used were vertical, and even unconnected, for easier legibility.

When civilization spread over Europe, handwriting was developed, and while the characters used were different in some respects according to race and locality, no deviation seems to have been made from the vertical.

In mediæval times a reform was effected in the time of Charlemagne, improving the legibility and gracefulness of the characters used, but not in any way changing the vertical practice.

Italy, during the Middle Ages, was foremost in cultivating fine writing; but no specimens show a sloping style.

The "Encyclopedia Britannica," in comparing the handwriting of the Italian scribes of those times with that of the

Germans, very pointedly says: "The German script never attained to the beauty of the hands of the north or the south of Europe, it having very commonly a certain slope which compares unfavorably with the upright and elegant hands of other countries."

Any attempts at slanting writing, prior to modern times, seem to have been short-lived.

The sloping or Italian style was invented by Aldus Mauritius, of Venice, early in 1500, and dedicated to the Italian States. It spread to France and from thence to England, when Queen Elizabeth changed her delicate vertical writing to the sprawling slant of the Italian style, and sloping penmanship became a firmly established fad.

It is interesting to know that Nelson, who was taught the Italian method, after the loss of his right arm, naturally acquired the vertical by writing with his left hand.

It is a well-known fact that a child will naturally endeavor to write vertically, and it is only by the persistency of the teacher that the required slant can be attained. This shows that much unnecessary labor is saved the teacher by not opposing a law of nature.

The special gain by vertical writing is that the health of pupils is not impaired; while legibility, rapidity, compactness, and ease in teaching and learning are the general advantages.

Eminent medical experts have declared that the positions assumed in the sloping handwriting are productive of spinal curvatures, myopia, and other ills.

To write vertically, the child naturally or instinctively assumes the position best suited for the purpose, which is entirely free from the objectionable features resulting from the attempt to write a sloping hand.

As a proof of the superiority of vertical penmanship the following citations are presented:

Drs. Berlin and Remboldt, for the Wurtemburg govern-

ment, proved that the sloping style causes the head and one shoulder to droop and the spine to curve. A natural result of this position is spinal curvature.

Drs. Von Reuss and Lorenz, for the Supreme Council of Hygiene of Austria, decided that the erect style of writing obviates one cause of spinal curvature.

The French Academy of Medicine favors upright writing.

Mr. Noble Smith, F.R.C.S., declares that "The postures of young people assumed in the sloping writing are one of the chief factors in the production of spinal curvature. Vertical writing is consistent with all hygienic principles."

The International Congress of Hygiene, London, and the Imperial and Royal Council of Hygiene, Vienna, favored vertical handwriting on hygienic grounds.

The School Board of London passed the following resolution: "That as the hygienic advantages of vertical writing have been clearly demonstrated and established both by medical investigation and practical experiment, and that by its adoption the injurious postures so productive of spinal curvature and short sight are to a very great extent avoided, it is hereby recommended that upright penmanship be introduced and generally taught in our elementary and secondary schools."

Dr. Juval, of the French commissioners, appointed to look into the causes of near-sightedness, reported for the commissioners that if vertical writing be adopted the principal cause will be removed.

Dr. A. Baginsky, in an examination of 1,000 cases of crooked growth, found that 89 per cent. took their rise between the ages of six and fourteen.

A. G. Lane, superintendent of schools, Chicago, writes: "I insisted upon the front position, with the paper or book placed with the edges parallel with the edges of the desk; that during the writing the eye should rest upon the written line as it does upon the printed page. Nothing was said about the slant, but the result was vertical writing."

Edward R. Shaw, Professor of Pedagogy, University of the City of New York, last year tested 1,511 pupils favorably for vertical writing, and declares: "There can be no doubt about vertical writing. It will not be speedily established, for there are many prejudiced people following the slanting writing, making their living out of it, who will fight to the bitter end."

John Jackson, F.E.I.S., of London, in his admirable work on handwriting, by the following simple illustration on page 8, shows that vertical writing is more legible than sloping.

The lines in all the rows are equal in length and the base points are equidistant from each other. By placing these lines against a wall and gradually receding from the wall, it will be found that the vertical lines continue to remain clear and distinct, while the sloping lines assume different degrees of haziness, which increases in proportion to the increase of the slope. He declares that "it is a demonstrated law that lines are clear, distinct, and legible in proportion as they are separate from each other; that all lines but the vertical are more or less delusive in their effects; that the upright lines possess a maximum of isolation or width apart. It follows both logically and geometrically that vertical writing must be the clearest and most legible."

In an article in the "Popular Science Monthly," by J. W. Wetherbee, on "Vertical Handwriting," an illustration shows the slanting writing by a girl, and another illustration of vertical writing by the same girl after three months' tuition. In commenting on the illustrations, the writer declares: "Unless his sight is different from that of a large number of persons whom the writer has tested, the universal verdict will be in favor of the legibility of the vertical writing. The test becomes much clearer when a short-sighted person, who wears glasses, takes them off and tries to read the two styles of writing. To such people, so plain is the proof,

in appearance. The conventional form is not adhered to: William Beverly Harrison, New York; American Book Company, New York; Silver, Burdett, and Company, New York and Boston; The George A. Ray Company, Scotia, Nebraska; A. Lovell and Company, New York and Chicago; E. O. Vaile, Chicago; D. C. Heath and Company, Boston; Maynard Merrill & Co., New York.

It is observed that among telegraph receiving operators the handwriting tends more towards the vertical as speed in writing increases.

Scholars at the present time are required to perform a far greater amount of writing than formerly. This will, under the present prevalence of evils, lead to pen paralysis, which is due to the cramped condition of the hand as taught and required by many teachers, and may be averted by the desired change to the vertical.

The most natural means should be adopted in lightly holding the pen, and in the free movement of the fingers, hand, and arm. Some of the most rapid writers place the penholder between the first and second fingers and necessarily write vertically. This practice by the few may become general when the vertical system is firmly established.

There is one objection to many of the present writing-books, and that is in the multiplicity of lines. There should be but one so-called base line. The child may, in copying letters, make them too large or too small. He can be finally made to understand his error, and by practice will soon after correctly write without the aid of additional lines.

Practice in free-hand writing, without even a base line, will prove beneficial, especially in the grammar schools.

Another advance in writing will follow the vertical method, and that is the banishment of the loop. The nearest approach to typewritten letters will prove the best. The loop in writing is only necessary in the letter *g*, in order to dis-

tinguish it from *q*. The loop takes up extra room, and its absence is a relief to the eyes.

The following rules are of importance:

The chair should be sufficiently high to permit the pupil, when sitting erect, to place his feet flat upon the floor.

The desk should be high enough to allow the elbow to touch the front edge of the desk when the pupil sits erect.

The pupil should sit erect, facing the desk, with his shoulders well back, and his feet flat on the floor. The fore-arms (but not the elbows) should rest on the desk at about an angle of forty-five degrees with the front of the desk.

The paper or leaf of book to be written upon should be directly in front of the pupil. The eyes should be parallel to the lines of the paper

The strictly front position of the writing-book is recognized by many notable oculists and others as best suited to avert a tendency to myopia, and further prevents any inclination of the body to the right; while other experts and theorists contend that the paper or book should be placed a little to the right of the centre of the body in order to prevent the cramped position of the hand and arm in the endeavor to write to the left of the centre.

After sufficient practice, pupils may find that it is as easy to write in the front position as any other.

In reading, the hands intuitively hold the book or paper directly in front of the body, thus avoiding the necessity of turning the eyes or head, which is manifestly correct and natural.

The oblique position of the paper occasions a difference in the distance of the paper from each eye, and may fully account for the fact that in the examination of the eyes of young men and women different glasses are necessary to fit the eyes for more perfect sight.

Newly patented adjustable desks are of great advantage,

and three sizes for a room will permit the correct adjustment of children of the class to the chairs and desks.

The committee recommend the passage of the following orders.

J. P. C. WINSHIP,
Chairman.
LALIAH B. PINGREE,
SIMON DAVIS,
CAROLINE E. HASTINGS,
S. ALBERT WETMORE.

1. *Ordered*, That vertical writing be introduced into all the schools of the city as soon as practicable.

2. *Ordered*, That a Superintendent of Penmanship be engaged to instruct teachers until the method is fully established.

3. *Ordered*, That the Committee on Text-Books present a series of writing-books in vertical penmanship for the consideration of the Board.

SCHOOL DOCUMENT NO. 14—1894.

ANNUAL REPORT

OF THE

COMMITTEE ON SALARIES.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

REPORT.

IN SCHOOL COMMITTEE,
BOSTON, Nov. 13, 1894.

The Committee on Salaries present the schedule of salaries of instructors for the year ending Dec. 31, 1895. No changes in the salaries as now fixed by the Board are suggested. The committee recommend the passage of the following orders.

For the Committee,

HENRY D. HUGGAN,
Chairman.

1. *Ordered*, That the salaries of instructors of the public schools be fixed for the year ending Dec. 31, 1895, as contained in the following schedule:

NORMAL SCHOOL.

Head-Master	$3,780
Sub-Masters, first year, $2,196; annual increase, $60; maximum	2,496
First Assistants, first year, $1,440; annual increase, $36; maximum,	1,620
Second " first year, $1,140; annual increase, $48; maximum,	1,380

HIGH SCHOOLS.

Head-Masters	$3,780
Masters	2,880
Junior-Masters, first year, $1,008; annual increase (for thirteen years), $144; salary for the fourteenth and subsequent years, with the rank of Master	2,880
Assistant Principal	1,800

[1] First Assistant	$1,620
Assistants, first year, $756; annual increase, $48; maximum . .	1,380

GRAMMAR SCHOOLS.

Masters, first year, $2,580; annual increase, $60; maximum . .	$2,880
Sub-Masters, first year, $1,500; annual increase, $60; maximum .	2,280
First Assistants, first year, $900; annual increase, $36; maximum .	1,080
Second " first year, $756; annual increase, $12; maximum .	816
Third " first year, $456; annual increase, $48; maximum .	744

PRIMARY SCHOOLS.

Second Assistants, first year, $756; annual increase, $12; maximum,	$816
Fourth " first year, $456; annual increase, $48; maximum,	744

KINDERGARTENS.

Principals, first year, $600; annual increase, $36; maximum . .	$708
Assistants, first year, $432; annual increase, $36; maximum . .	540

MECHANIC ARTS HIGH SCHOOL.

Head-Master	$3,780
Masters	2,880
Junior-Masters, first year, $1,008; annual increase (for thirteen years), $144; salary for the fourteenth and subsequent years, with the rank of Master	2,880
Instructors, first year, $1,500; annual increase, $60; maximum .	2,280
Assistant Instructors, first year, $756; annual increase, $48; maximum,	1,380

SPECIAL INSTRUCTORS.

Special Instructors of Music	$2,640
Assistant Instructors in Music	852
Director of Drawing	3,000
[2] Assistant to Director of Drawing	1,800
Teacher of Chemistry, Girls' High School	1,620
Laboratory Assistant, " " "	804
" " Roxbury " "	804

[1] The rank of First Assistant (High Schools) shall be abolished as the position now recognized shall become vacant in schools where first assistants are now employed. [Rules, Sect. 100.] There is at present one first assistant (High Schools) in service.

[2] To give instruction in drawing in the Normal School and to assist the Director of Drawing.

Teacher of Physical Culture and Elocution, Girls' High School	$1,200
" " " " Girls' Latin School	600
Teacher of theory and practice of the Kindergarten, Normal School (Miss Laura Fisher)	2,400
Assistant teacher of the theory and practice of the Kindergarten, Normal School (same salary as that of a Second Assistant, Normal School).	
Director of French and German	3,000
Assistants	1,500
Director of Physical Training	3,000
Assistant	2,000
Special teacher in Modern Languages in the Brighton, East Boston High, and Girls' Latin Schools	660
Horace Mann School for the Deaf:	
Principal	2,508
Assistant Principal, first year, $1,068; annual increase, $60; maximum	1,308
Assistants, first year, $588; annual increase, $60; maximum	1,008
Principal of Manual Training Schools	2,004
Instructors in Manual Training Schools	1,620
Instructors in Manual Training Schools	1,200
Instructor in Manual Training (Horace Mann School)	450
Assistant Instructors in Manual Training Schools, first year, $804; annual increase, $48; maximum	900
Principal of Schools of Cookery	1,000
Instructors in Schools of Cookery, first year, $456; annual increase, $48; maximum	744
Instructor in School on Spectacle Island (including all expenses connected with the school, except for books)	400
Instructor Military Drill	2,000
Armorer	900

Teachers of sewing:

One division	$108	Seven divisions	$540
Two divisions	192	Eight divisions	588
Three divisions	276	Nine divisions	636
Four divisions	348	Ten divisions	684
Five divisions	420	Eleven divisions	732
Six divisions	492	All over eleven divisions	744

Principal, Evening High School (per week), first year, $40; second year, $45; third year and subsequently	$50 00
Assistants, Evening High School (per evening)	4 00

Principals, Evening Elementary Schools, in schools where average attendance for month is 100 pupils or more (per evening), $5; in schools where average attendance for month is less than 100 (per evening)	$4 00
First Assistants, Evening Elementary Schools, in schools where average attendance for month is 75 pupils or more (per evening), $2.50; in schools where average attendance for month is less than 75 (per evening)	1 50
Assistants, Evening Elementary Schools (per evening)	1 50
[1] Masters, Evening Drawing Schools (per evening)	10 00
Principals, Evening Drawing Schools (per evening), first year, $7; second year and subsequently	8 00
Assistants, Evening Drawing Schools (per evening), first year, $4; second year, $5; third year and subsequently	6 00
Special Assistant Teachers, lowest classes Primary Schools (per week)	5 00
Special Assistant Teachers, Kindergartens (per week)	5 00

2. *Ordered*, That Second Assistants, Primary Schools, in buildings having eight or more teachers, shall receive sixty dollars ($60) each per annum in addition to the regular salary of the rank.

3. *Ordered*, That Masters elected as Principals of High Schools, whose average whole number for the preceding school year exceeds one hundred pupils, receive $288; Sub-Masters, in Grammar Schools, elected as Principals, $216, each, in addition to the regular salary of the rank.

4. *Ordered*, That the salaries of temporary teachers of the following-named ranks be fixed at the following rates, for each day of actual service: Temporary Junior-Master, $5; Assistant, High Schools, $2.50; Sub-Master, Grammar Schools, $4; Instructor, Mechanic Arts High School, $4.

[1] The rank of Master in Evening Drawing Schools shall be abolished as the position becomes vacant by the retirement of the present incumbents.

In School Committee, Boston, Dec. 11, 1894.

Accepted, and ordered to be printed.

Attest:

PHINEAS BATES,

Secretary.

REPORT.

In School Committee, Boston, Dec. 11, 1894.

The Committee on Manual Training presents the following report:

In manual training the lines of work have not been materially changed since the last extensive report of the committee in 1891, and the equally full report of the Superintendent in 1892. The committee has not yet found it possible to adopt a comprehensive plan for all the schools, as advised by the former chairman and thought so desirable by all. The pressing need for appropriations for school buildings has been yearly increasing, and much that was anticipated has not yet been accomplished, but it can be truly affirmed that manual training has been surely if slowly enlarged and broadened during the last two years.

Recognized as a legitimate part of school-work, with time allotted to it in the course of study, and having the cordial coöperation and support of the School Board and teachers, its educational and practical value is no longer matter of discussion. The problems now before the committee are, — *first*, that of regulation, that the work shall bear a proper relation to and have proper connection with other studies; *second*, the matter of suitable expansion, how to extend manual training into classes which now receive little or none of it; and *third*, to secure for this branch its proportional amount of time and money.

KINDERGARTEN.

The Kindergarten being the first or lowest elementary grade of the public schools, includes the first teaching in manual training. Although there are still some districts unprovided for, the number of Kindergartens has now reached fifty-six, enough to perceptibly influence and modify the school system. It is here that children from five to six or seven years old acquire a fundamental knowledge of *things*, and make an early acquaintance with materials and tools. Here the senses and the faculties of observation are trained by "handling and doing," and much power and facility for work are gained, if only by weaving a mat or modelling an acorn. By constant association with objects, the children gain ideas of size, color, and number, of position, direction, and measurement, which pave the way for drawing, writing, and arithmetic and lead to the next higher or Primary classes.

PRIMARY SCHOOLS.

In this department the manual work comprises a course of study more or less systematic, in models and type forms prepared for children in the three years of the Primary School. The study of forms from solids, followed by drawing the same; modelling in clay these forms, and objects based on them; the use of tablets and sticks in connection with drawing; the making of type forms from paper, and the study of faces and edges; the arrangement of simple geometric figures, cutting these figures from colored paper and pasting them to a background, with some study of elementary decoration; sewing on canvas or cloth, — these are varieties of manual training carried on in the Primary Schools. Not all is done in any one school, but very few will be found where something praiseworthy is not accomplished, and in many the results are excellent.

GRAMMAR SCHOOLS.

In the course of study for the Grammar grades, as in the Primary classes, two hours a week is laid down for manual training. This includes sewing and cooking for the girls, and wood-working for the boys, with some clay-modelling and color-work for both. These distinctions are not arbitrary.

SEWING naturally takes precedence, both because it has been a subject of instruction for many years, and for its intrinsic importance. Its educational value, training the eye and hand, developing ingenuity, precision, patience, and industry, cultivating good taste, love of beauty, and appropriateness in dress, make it an approved means of all-round culture, while the ease with which it is introduced as an exercise into the regular class-room, and the small cost of materials and instruction, give it an advantage over all other forms of manual training.

Most admirable results have been obtained since the adoption of a plan or course in sewing two years ago. That which was encouraged for its great industrial utility and practical results may now be considered a real educational agency, and still a very large number of garments are yearly completed, ready for immediate use in the homes. The "lack of uniformity" once observed has been largely overcome, the instruction conforming more closely to the course of study. Unlike wood-working, the materials to which the teaching is applied are brought by the pupils from their homes, and must inevitably continue to be of great variety. All girls in the sixth, fifth, and fourth classes are required to sew two hours a week. In some of the schools, usually the girls' schools, sewing is carried on in every class; others have it no higher than the third class. Some Primary classes do regular sewing, and in mixed schools boys sometimes join in the work. In seventeen schools the elementary sewing is

followed in the first class by instruction in more elaborate needle-work, in cutting to measure and by pattern, and in making dresses and other garments. Patterns are draughted from measurements taken, and garments fitted upon members of the class by each other, with very satisfactory results. There are at present thirty-three teachers of sewing, an addition of two having been recently made. At the beginning of the present school year Miss M. E. Robbins, of East Boston, resigned on account of ill health, and Mrs. Stevens, who had faithfully served in the Wells School for nearly quarter of a century, relinquished the work at the same time.

The instruction in COOKING promises to be equally successful, although having much less scope than sewing, inasmuch as the course of study provides that only girls from the second Grammar classes shall receive the lessons.

The necessity of rooms specially fitted up as kitchens requires many of the pupils to leave their regular schools and go to other buildings, the distance travelled being sometimes two miles or more and involving much waste of time.

There are at present fourteen school kitchens connected with the public schools, employing ten teachers and three assistants. The position of "Principal of Cooking Schools" continues to be held by the enthusiastic and painstaking teacher, Miss Amabel G. E. Hope.

The first school kitchen in Boston, and one of the first public-school kitchens in America, founded by Mrs. Hemenway in 1885, and known as School Kitchen No. 1, was this year transferred from the Starr King school-house in Tennyson street, to the Winthrop School on Tremont street. In this section another kitchen is very much needed. The girls in the Prince School are not at present provided for, as the classes from the Franklin and Winthrop schools are so large as to take all the sessions at Kitchen No. 1.

It is hardly necessary to rehearse the advantages of this

instruction to the ordinary school-girl. The subject of cooking, which is really that of Domestic Economy, including instruction in the care, preparation, and constituents of food materials, means much more than the making of "dishes." The social, hygienic, and economic questions involved in such instruction are of the greatest practical concern, and it is believed that the careful and systematic teaching needed in this branch of study will yield the best possible educational results. Considered even as accomplishments, the Boston school-girl is fortunate to be able to acquire a knowledge of needle-work and cookery as a part of her school education.

While the girls in the second class are cooking, the boys of the same grade are occupied with WOOD-WORKING. This also is done in rooms specially fitted up for the purpose, and of these "manual training rooms" there are now fifteen at the service of the Grammar Schools.

This includes the Eliot School, Jamaica Plain, and the North Bennet Street School, which do not belong to the city, but to which classes, from the public schools are admitted. Ten teachers are employed under the leadership of an able and conscientious "Principal of Manual Training Schools." Until this year, this equipment and teaching force have been exclusively employed in instructing boys from second classes, this grade having been selected as the first in which systematic teaching in wood-working should be applied. The plan advocated by the Committee on Manual Training included a course of at least three years, taking pupils of the three upper classes, but the amount of money needed for this could not at once be obtained. Many boys leave school before the year of graduation, and for that reason it was decided that the first class alone should not be selected; moreover, as some degree of physical strength and some maturity of mind are needed to profit by the wood-working, it was felt that no class below the third should attempt it;

therefore, in order that the children in every section of the city might have the same privilege, the wood-working was begun in all second classes and was so carried out last year.

This year, with the same number of teachers, the work has been extended into most of the first classes in East Boston, Charlestown, and West Roxbury, and two classes in South Boston. With the present equipment and two more teachers, the same extension could be carried into all the schools of Dorchester, Brighton, Allston, West End, and North End, where work-rooms are already in use. The efficient principal of Manual Training Schools, after careful consideration, has estimated that in order to complete this extension for the whole city, the time of four more teachers would be required, and the equipment of four new rooms, — two in Roxbury, one in South Boston, and one at the South End. The cost of equipping these rooms would be about $3,000. This comparatively small expense would now provide rooms for giving instruction in wood-working to all the boys in the first and second classes. Sewing, clay-modelling, color-work, and cardboard-work may easily and profitably fill the allotted time of the sixth and fifth classes. Similar work can also be done by the fourth class, but the committee is considering some form of knife-work adapted to the regular class-room as more suitable for pupils of this grade.

This leaves the third class, which it is generally conceded should have manual training instruction in "manual training rooms." As soon as the first classes are provided for, the committee should estimate the expense and ask for appropriations for the equipment of wood-working rooms sufficient to accommodate this grade with the second and first. This plan of extension is simply carrying out the policy of the committee and the regular requirements of the course of study, which gives two hours a week to some form of this subject.

In this connection it is pleasant to record the success of

an experiment begun last year and continued this year. The girls from the third class in the Bowditch School have been allowed to receive instruction in wood-working at the Eliot School. The master writes: "They are enjoying it very much, and I regard it as two hours well spent. I am sure I see growth from it in many ways. There are quite a number of small girls in the class this year, and I feared they might not be able to handle the tools, but we have no difficulty on that account. The parents are also pleased with the work. I should be glad if it might become a permanent feature of the programme."

Those who were so fortunate as to see the most interesting exhibit of finished work from this class, on the visiting days last May, must have been convinced that third-class boys also should have the opportunity to profit by such manual training.

Although the subject of DRAWING is not under the care of this committee, yet it is so closely allied to every other part of manual training that it necessarily deserves and receives much attention. During the year 1892–93 the whole subject of drawing was under discussion in the School Board with only a partial settlement. Pending the final decision concerning text-books and methods, the Manual Training Committee obtained the adoption of a course in Mechanical Drawing specially adapted for the second-class pupils receiving instruction in wood-working.

A most excellent course was prepared by the principal, and in the work of the second classes drawing received a new impetus from being directed to a definite object. It is hoped that when a permanent course in drawing is decided upon, it may embody this valuable programme.

The committee desires also to report this year upon COLOR WORK, or designing and the use of color, as a form of manual training.

For some time several of the masters have provided color-

work as an agreeable occupation for the boys during the sewing hour of the girls. They did not propose to "enrich" the course of study, or to establish any change in the school curriculum, but it was thought that, as the sewing hour was largely spent by the boys in fragmentary exercises, merely to fill in the time, some study might be introduced, which, if not strictly educational, would at least have the merit of interesting those who engaged in it. Time, however, and the proper development of the work, has given ample demonstration of its several distinctly educational features. One of the most marked effects is its influence over the character of the pupils as shown in the discipline of the school. It is admitted by those teachers whose boys are allowed color-work, that its tendency has been to produce good order and regular and punctual attendance. Boys will come to school early, stay late, or spend an entire afternoon on a "one-session day," if allowed to work with color.

Color develops a high degree of accuracy and skill of hand, educates the eye, refines the taste; it means perseverance, attention, exactness, and neatness. No branch of manual training offers a wider field for practical uses, nor awakens stronger incentives to hard, accurate work. It moreover has the advantage of not requiring strength, as wood and iron work do, therefore it can be done by all Grammar-School pupils. Furthermore, it yields greater returns for money expended than any kind of manual training now done in our schools. Boys who have not given promise of being graduated, or of earning a fair living, have entered the Lowell Free School of Design, and are on the road to useful and happy lives.

The work has passed the experimental period, its intensely practical uses have been seized, and without the restrictive bounds of a "course," with perfect freedom, but under intelligent guidance, it has reached a stage which demands the favorable consideration of the Board.

It opens a new field, the school life taking on new meaning and interest. Through the children, its refining influences are felt in their homes and surroundings. It forms a basis of correct observation, and the perceptive faculties necessary to be trained in other departments of study are stimulated and quickened through its correlative value.

Occasionally the Board has appropriated a small sum of money for this purpose, but oftener, rather than give up such a manifestly valuable work, the masters have provided materials at their own expense. This should no longer be necessary, for the Board should foster and dignify what it so obviously cannot overlook. "Color-work" is not a mere "fad," but a work of sound, practical, educational value.

THE HORACE MANN SCHOOL.

As part of the wonderful work done in this special school for the deaf, manual training is carried on in the same line as in the other schools of the city.

The sewing, dress-making, and millinery classes are under the competent direction of Miss Martha F. French, and the earnestness and almost enthusiasm of the children in these classes show that the work is both pleasurable and instructive. Excellent wood-working is being done under the management of Mr. J. H. Trybom. The number of pupils receiving instruction this year is 33, — 24 boys and 9 girls.

The interest the children display in manual training, and the results achieved by them, afford ample reason for the continuance of these courses in the school. The deaf in them are instructed in work of great practical use, — work by which they can see and measure accurately their capability of production, and which, in its encouragement to them in other lines, is of incalculable value. The completed wood-models and finished needle-work of this school are fully up to the standards maintained in the schools for hearing children.

MECHANIC ARTS HIGH SCHOOL.

As the culmination of manual training in the public schools, stands the Mechanic Arts High School. The establishment of a school which should be a High School of the same grade as the Latin and English High schools, its distinctive feature being instruction in *mechanic arts*, was a matter of pride and congratulation, and yet of deep concern. It was felt that upon the wisdom of its curriculum and management, the future development of similar institutions would greatly depend. Recommended by the committee in 1888, at the suggestion of the City Council, and after the most careful study of the subject by the superintendent, it met with a prompt and generous response from the people, and it was believed that the reasonable demands of such a school would receive the hearty support of the city authorities.

The Mechanic Arts High School was opened Sept. 6, 1893, with 214 pupils in attendance.

The building was unfinished, and the classes were conducted for many months in unfurnished rooms, with the saw and the hammer in merciless competition with the teacher's work. Conditions more unfavorable to successful teaching are almost inconceivable.

Nevertheless, the tireless efforts of devoted teachers, under the leadership of a head-master of exceptional power, conquered seemingly insuperable difficulties.

It is difficult to overestimate either the service rendered to the school by Dr. Hill during this first trying year, or the loss which it sustained when the larger interests of the State rightfully demanded his talents. Fortunately, however, all experience proves that a good work, well started, is sure to move steadily forward even without the guiding influence of the master hand that gives the initial impulse.

Soon after the resignation of Dr. Hill, Mr. Charles W.

Parmenter was elected head-master, taking charge of the school at the beginning of its second year. Mr. Parmenter is a well-known educator, with rare attainments and unusual experience in this special line. His enthusiastic love of the work, his energy and administrative ability already shown under disadvantageous circumstances, prove that the choice of the committee was the wisest that could have been made.

The total number of pupils enrolled during the first year was 228, but the largest number belonging at one time was 217, and at the end of the school year this number was reduced to 158. Of these pupils only 104 returned last September to begin the second year's work. The number belonging Nov. 1, 1894, was as follows:

First-year class	60
Second-year class	95
Total	155

This diminution in numbers is, under the circumstances, not at all surprising. The trying delay in securing necessary equipment for the first year's work, due to causes beyond the control of the School Committee, and the uncertainty concerning the advantages that would be offered in the mechanical departments during the second year, unquestionably deterred large numbers of desirable pupils from seeking admission to the school last September. Moreover, the Manual Training Committee did not feel warranted last June in repeating the statements made in 1893 to call the attention of the graduates of the Grammar Schools to the character and advantages of the Mechanic Arts High School. The committee had reason to fear that more pupils would apply for admission than could be properly accommodated, and its chief anxiety was to secure the completion and equipment of the building.

No one who has studied the trend of industrial and social progress doubts that the older forms of High-School education are ill suited to the needs of many boys in a large community, and since the American public school has always accommodated itself to the increasing wants of the people, there can be no doubt that the future of the Mechanic Arts High School is assured. Manual training has demonstrated its value so fully that it cannot fail to continue an important factor in our educational system, and the experience of similar schools in other cities is strong evidence that the Mechanic Arts High School will be taxed to its utmost capacity as soon as it is completed and adequately equipped.

Unless the city of Boston is ready to relinquish the proud position of educational leadership, it must pursue a liberal policy toward this school. Steps should be taken at once to secure the completion of the building according to the original plan. The part of the building that was designed to contain the chemical and physical laboratories, the library, and the principal's office has not been erected. The argument used to justify this omission was that the laboratories would not be used during the first year, and that the school could be organized in the main portion of the building while the wing was in process of erection; but no appropriation has yet been made for the completion of the building, and the school has reached a point where the laboratories are indispensable. There is, however, no room that can be made even temporarily available for a chemical laboratory. The best that can be done to meet the present emergency is to convert into a temporary physical laboratory a room designed and needed for iron-fitting, and ill suited to the use to which it must be put. A section of this laboratory has been cut out by temporary partitions for a principal's office, but the room thus formed is in a very inconvenient location for the proper discharge of the principal's duties.

These makeshifts are considered merely to meet the press-

ing needs of the hour, for it is inconceivable that the city of Boston will leave the school unfinished, and thus cripple the latest and most important addition to its educational system.

The work of providing the mechanical equipment, for which an appropriation of $25,000 was made last July, has been pushed as rapidly as circumstances would permit. The appropriation asked by the School Committee was reduced by the city government, and it soon became evident that the amount available would prove inadequate to secure the entire equipment originally desired. This necessitated a change of plan which caused some delay, for it was deemed best to secure such a division of the amount as would secure satisfactory equipment in all departments for a limited number of pupils.

All of the equipment that will be needed during the current school year is now under contract, and the time limitations of the contracts are such that the new appointments should be ready for use as soon as the boys have finished the exercises in wood-working planned for the first year. The wood-working rooms were not opened until the middle of last March, and consequently only a small part of the first year's course was completed.

An appropriation of at least $3,000 will be needed for apparatus for the physical laboratory.

The plans and specifications that have been prepared include the construction of laboratory tables and cases for apparatus that can be easily removed to the permanent physical laboratory as soon as it is erected. It is impossible to overestimate the importance of teaching physics by methods calculated to show clearly the application of its principles to the mechanical processes taught in the shops. This cannot be done without proper apparatus. To teach physics, in a manual training school, from a text-book, merely as an information subject, would be an unpardonable violation of the most firmly established principles of education.

One of the most important factors of a long-established school is its accumulated wealth of books and illustrative material. It is, of course, impracticable to furnish a new school adequately at the outset, but no one will question that the nucleus of a reference library should at once be provided for the Mechanic Arts High School, and an appropriation of at least $500 should be made for that purpose.

The school is now in successful operation in both the academic and the mechanical departments, and enough has been accomplished to show that the work has been skilfully planned and that the institution gives promise of great future usefulness.

A complete course of study cannot be formulated until the school has passed its tentative stages, but the main lines upon which the future course will be constructed are pretty clearly defined. There is a strong tendency to confuse the aims of trade schools with those in which manual training is introduced for its educational value, and the distinction cannot be too plainly stated. It should be fully understood that in the Mechanic Arts High School no particular trade will be taught, but great service will be rendered to those who may finally become skilled artisans. The primary object will be to fit boys for the vast number of employments in which mechanical skill and intelligent appreciation of the principles which underlie mechanical processes are essential to the highest success. The training which it will give will be well calculated to reveal to boys their native aptitudes and possibilities and enable them to avoid disastrous mistakes in the choice of occupations. It is confidently believed that such a course will prove the best preparation for the higher scientific and technical schools, and will serve to encourage many boys to seek a thorough scientific education.

In the academic work, special emphasis will be placed

upon English and the mathematical branches. The subjects of study will be: elementary algebra, plane and solid geometry, advanced algebra or the elements of trigonometry, physics, chemistry, history, civics, French, and English.

The instruction in the shops will include: carpentry, wood-turning, pattern-making, forging, chipping, filing, and iron fitting, and the elements of machine-shop practice.

Boys who grow up in families where wealth and culture have been an inheritance for generations are likely to seek the Latin School and Harvard, but there is a vast number of equally worthy boys to whom this school offers golden opportunities. Almost without exception the pupils show a deep and constantly increasing interest in their work. Many of the exercises make great demands for patience, industry, and perseverance, and the manly spirit in which these demands are met gives encouraging evidence that the hopes of the founders of the school will be speedily realized. The methods pursued can scarcely fail to give a higher appreciation of the dignity of labor. The boys soon discover that quicker eyes, defter hands, greater alertness, and better judgments win the prizes in the shops, and they readily see what is needed in the busy activities of life. The value of a school is measured by the industry that it encourages, the standards of truth and accuracy upon which it insists, the self-control which it develops, and the worthy ambitions that it inspires.

The beginning already made at the Mechanic Arts High School warrants the belief that judged by these standards its future is full of promise.

In submitting the present report, the committee would again express its obligations to Mrs. Hemenway and Mrs. Shaw, whose names have become "household words" in Boston.

It was early foreseen that the chief difficulty in the successful introduction of manual training into the schools would be the lack of suitably trained teachers, and to these steadfast friends of education we are indebted for the necessary normal training which most of our teachers have received. The Normal School of Cookery, established by Mrs. Hemenway, has supplied nearly all the instructors in Cookery, and Mrs. Shaw has generously given to teachers every advantage in various forms of manual training at the Industrial School, North Bennet street, and at the Normal Sloyd School, Appleton street. The manual training room at the Rice School has been entirely supported by Mrs. Shaw until the present school year. The Trustees of the Eliot School, Jamaica Plain, should also be gratefully remembered for the instruction given to pupils from the public schools and for the training so freely afforded to the teachers.

Finally, the committee firmly believes that each child should have systematic bookwork and handwork, and that these two kinds of training should be given side by side through all the school life. As the best education comes from constant use of all the faculties, manual training must be well adapted for the purposes of such an education. It should never be looked upon as a separate system, and the time alloted to it should not be considered an "encroachment upon regular school studies." When the work is carefully and coherently carried out in all the grades, manual training will be doing a large part towards developing "the capacity for enjoyment and the capacity for serviceableness," which President Eliot so earnestly declares to be the best "fitting for life."

EMILY A. FIFIELD, *Chairman*.
LALIAH B. PINGREE,
ERNEST C. MARSHALL,
S. ALBERT WETMORE,
WALTER GILMAN PAGE.

SCHOOL DOCUMENT NO. 17—1894.

ANNUAL REPORT

OF THE

COMMITTEE ON KINDERGARTENS,

1894.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1895.

In School Committee,
Boston, Dec. 11, 1894.

Accepted, and ordered to be printed.

Attest:

PHINEAS BATES,
Secretary.

REPORT.

IN SCHOOL COMMITTEE, BOSTON, Dec. 11, 1894.

The Committee on Kindergartens present the following report:

In 1888 the School Board adopted fifteen kindergartens, hitherto supported by private charity. It was not without misgivings that the friends of the movement witnessed the transfer to a large public-school system, but it soon became apparent that no radical changes were to be made in the management, and that they were to be carried on in the same spirit in which they were begun. The "Special Committee" appointed for the purpose, the Superintendent, and the Board of Supervisors have from the first given enthusiastic support to these schools, and the City of Boston has most generously provided for their maintenance, and at the close of six years the kindergartens have not only increased in number, but in strength and efficiency.

It has been the plan of your committee to establish new kindergartens in the order in which they have been asked for by the division committees, and the following tables show the yearly increase.

KINDERGARTENS.

Half-year ending January 31.

	No. of Schools.	No. of Teachers.	Average whole No.	Average attendance.	Number at date.
1889	19	36	976	748	1,074
1890	24	46	1,362	1,000	1,466
1891	31	56	1,699	1,263	1,778
1892	36	69	1,896	1,370	1,991
1893	43	77	2,237	1,607	2,323
1894	54	81	2,411	1,753	2,518

Half-year ending June 30.

	No. of Schools.	No. of Teachers.	Average whole No.	Average attendance.	Number at date.
1889	22	41	1,251	881	1,299
1890	25	46	1,553	1,143	1,475
1891	31	56	1,785	1,225	1,783
1892	36	70	1,961	1,345	2,008
1893	43	80	2,272	1,535	2,335
1894	47	84	2,738	1,969	2,795

NOTE. — Since the opening of schools in September seven new Kindergartens have been established, making fifty-four in all.

Districts unprovided for, 13. Additional kindergartens needed in districts partially provided for, 5. Your committee urge the establishment of these as soon as practicable.

DISTRICTS IN WHICH THERE ARE NO KINDERGARTENS AND WHERE OTHERS ARE NEEDED.

Unprovided for.	Additional ones needed.
Frothingham,	Prince,
Warren,	Quincy,
Winthrop,	Franklin,
Sherman,	Hugh O'Brien,
Bigelow,	Lewis.
Gaston,	
Norcross,	
Dudley,	
Lowell,	
Edward Everett,	
Gibson,	
Harris,	
Tileston.	

PLAN OF ORGANIZATION.

Kindergartens with fifty or more children are in charge of two teachers, — a principal and an assistant.

Kindergartens with thirty children or more have a principal and a special assistant.

Kindergartens with twenty-five children are in charge of one teacher, who may be either a principal or an assistant.

The work is divided into two grades, elementary and more advanced, according to the age and capacity of the pupils. Children who enter at three and a half years usually remain two years, but the greater number remain only one year. This is generally due to the lack of recognition of the importance of the training which the kindergarten gives, for though you speak with the "tongues of angels," and make not mention of reading and writing, it "profiteth you nothing."

OUTLINE OF COURSE OF WORK.

The kindergarten provides for the general training of the child's powers rather than for the teaching of specific subjects. It is a school of experience and not of definite achievement; it aims to open the child's nature and place him in the right attitude towards those aspects of the world which shall later on constitute the subjects of his study. It preëminently emphasizes the importance of the principle of connectedness in teaching, and whether in conversation or story, play or work, it seeks to train harmoniously thought, feeling, and will.

Phases of the work in the kindergarten are as follows:

Language Work. — Conversation and story.

Form Study — *Geometric Solids.* — Construction, color, number, etc.

Manual Training. — Weaving, sewing, folding, cutting, etc.

Physical Training. — Plays and marching.

Science Work. — Observation and care of plants and animals.

LANGUAGE WORK.

The conversations and stories of the kindergarten are made the basis of training in correct English expression, and furnish a valuable means of instruction, and for introducing in simple and attractive form the truths of the world of nature and of man. They develop the imagination, cultivate the sympathies, stimulate thought, direct observation, encourage activity, and emphasize the home; the kindergarten; natural phenomena connected with spring, summer, autumn, and winter; processes of nature; sowing of seeds; nesting of birds and habits of other animals; flowing of streams; budding of trees, blooming of flowers, observations of fruits, vegetables, and grains.

The trades that emphasize typical occupations: carpenter, joiner, shoemaker, blacksmith, wheelwright, baker, etc.

The festivals, Thanksgiving, Christmas, Washington's birthday, the birthday of Froebel, the founder of the kindergarten.

Also stories which present to the imagination and heart, ideals of unselfishness, heroism, industry, fidelity, helpfulness, etc.

FORM STUDY — GEOMETRIC SOLIDS.

A series of solids, planes, sticks, rings, which provide for the observation of color, form, number, and are used especially for the development of the power of representation and the creation of original forms. These are

Gift 1. Colored balls. Lessons in form, color, and movement.

Gift 2. Three type forms, sphere, cube, and cylinder. Ideas of form developed by means of contrast. Effect of movement upon form.

Gifts 3, 4, 5, 6. Building Gifts. Cubes divided into parts for the purpose of the representation of other forms and for original creations; development of ideas of sequence and continuity, and study of a variety of forms included in these gifts; namely, cubes, triangular and square prisms, columns, etc. These solids furnish the basis for the study of fractional division and elementary geometry.

Tablets. — Square, oblong, triangular sticks of various lengths and rings of different sizes. These are used for surface and linear representation of forms made with the building gifts, and for decorative work.

Sticks and Peas. — Outline of familiar things, type solids and planes, and objects based on these — cubes, prisms, squares, triangles, oblongs, rhombs, hexagons, octagons, etc.

Modelling of Type Forms and Modification of these. — Sphere, cube, cylinder.

Natural Forms. — Fruit, vegetables, animals, flowers, leaves. Illustrating objects connected with stories, etc.

MANUAL TRAINING.

The occupations which furnish in the main the basis for this training consist of cardboard, sewing, weaving, folding, cutting, modelling, and drawing.

Sewing is twofold. Outlines of objects connected with science work, and combinations of lines leading to design.

Weaving. — Colored papers, mats, and strips. Patterns are produced by combinations of simple numerical formulas and harmonious arrangement of color.

Folding. — Squares of colored paper, transformed into simple objects and symmetrical forms. Observation of mathematical forms found in both.

Cutting. — Colored squares folded and then cut to produce elements recombined into symmetrical forms. Emphasis on design.

Drawing is twofold. 1st. Freehand representation of simple natural objects: leaves, flowers, butterflies, etc. 2d. Net-work drawing for developing ideas of measurement, proportion, design, sequence, and form.

General preparation in elements necessary to correct drawing. Drawing with brush and use of color whenever practicable.

PHYSICAL TRAINING.

The physical training of the kindergarten is indirect. The child represents movements of birds and other objects and activities. These not only exercise the different parts of the body, but appeal to the heart and mind as well, broadening the sympathies, strengthening the will, and quickening the imagination. Other games typical of trades and familiar activities, such as the carpenter, blacksmith, baker, wheelwright, farmer, foster the community feeling, and help the child to realize what man is doing for man.

In addition to these there are definite exercises in marching, for development of sense of rhythm and to establish right movement in walking.

SCIENCE WORK.

Observation of plants, flowers, trees, planting of seeds, gathering of leaves, seed-vessels, nuts, fruits, vegetables. Study and care of domestic animals.

MUSIC.

Singing of songs with words and music adapted to young children. The cultivation of low, sweet tones and correct expression.

MORAL TRAINING.

Froebel, the founder of the kindergarten, believed that any system of education which did not train the affections and will as well as the mind was defective, and the moral

training in the kindergarten is one of its marked characteristics. Work and play, song and story, call out the sympathies of the child; but the moral training of the kindergarten does not end with the cultivation of right feeling: it insists upon the formation of habits which constitute the bases of character. No outward incentive is used. Love and not fear is the controlling influence, and interest and enthusiasm the spur; and any system of moral training which is not based upon these principles will be ineffectual. Formal instruction in morals and manners may arouse sentiment, but it is in the exercise of right thinking, right feeling, that the character becomes strong.

CONNECTION BETWEEN KINDERGARTEN AND PRIMARY GRADE.

The connection between the kindergarten and the primary school is of the greatest importance. The primary school has adopted some of the methods of the kindergarten, but no systematic union yet exists. This is due to the fact that the kindergarten is not fully recognized as preparatory to the primary work, but still remains an independent organization which children may attend or not as parents desire; therefore the lowest grade primary is composed of pupils who have been one or two years in the kindergarten and those who have never attended school before. The pupils from the kindergarten are in number, form, color, language, and manual training far in advance of the pupils who have never attended school before. Yet the primary school does not take this into account, and too often repeats the work of the kindergarten on these subjects. "What do you do with those who are ready to go on to more advanced work?" was asked of a primary teacher. "I let them wait for the others, of course," was the reply; "it makes my work easier." It is not difficult to imagine the effect of the lack of proper employment on the pupils; they become idle, restless, indifferent, and troublesome.

Your committee have tried in various ways to remedy this evil, but little has been accomplished. Efforts have been made in a few of the schools to provide for the quicker promotion of pupils who have been trained in the kindergarten, and in one instance to test their ability to complete the primary course in two years. The success of this experiment proved conclusively to the committee that one year can be saved in these grades. In this instance all the kindergarten pupils in the third class of the primary school completed the work of both the third and second classes, and were promoted to the first class at the end of the year. There is abundant proof that individuals have, in considerable numbers, not only saved time but have actually completed the primary course in two years; but your committee have been unable to secure sufficient data to justify it in making any statement which would be scientific. The practical difficulties are considerable, but not by any means insurmountable. Four things seem to your committee to be necessary:

1. That as far as practicable the rule, providing that children shall have one year in a kindergarten before entering the primary school, shall be carried out.

2. That the transition from the kindergarten to the primary school should be a more gradual one; that the primary course of study should be modified so that it may continue and not repeat the work of the kindergarten in those subjects which belong to it. And there should be a continuity of plan which would provide for the further carrying on of the work begun in the kindergarten, the value of which all teachers recognize.

3. There should also be supplementary instruction to primary teachers in the principles and methods of the kindergarten. A movement in this direction has already begun, and a large number of primary teachers have attended

lessons given for the purpose by Miss Fisher, teacher of the theory of practice in the Normal School.

4. That a reduction in the number of pupils in the primary schools is especially necessary, that a teacher shall not be required, at the most important period of a child's life, to teach, guide, train, develop, love, help, and be patient with fifty-six or more children.

Your committee has long been of the opinion that when these changes are made there will be a saving of at least one year for the pupils who now take four years or more to do the work of kindergarten and primary grades, and that these pupils will enter upon the work of the grammar grades better prepared than they are now.

Your committee has within a few weeks asked for a Director of Kindergartens. This request was made because the kindergartens need more frequent and expert supervision than the Board of Supervisors can give them. It is also believed that a Director of Kindergartens would be of great assistance to the Board of Supervisors in establishing the right relations between the kindergartens and the primary grades. Your committee acknowledges with highest appreciation the work that has been done in the kindergartens by the Board of Supervisors. They have performed the duties of their office with sympathetic insight and keenest appreciation of the aims and spirit of the work, but they recognize the need of a director who has been trained in the principles and methods of the kindergarten and has had practical experience in supervising and shaping the work, and who sees it in its relation to higher grades of instruction.

The need of a director is also felt in the work of examining the candidates for the Special Kindergarten Certificate. The director should also have charge of the instruction in the Kindergarten Training department of the Normal School.

PREPARATION OF TEACHERS.

Teachers of the kindergarten were formerly all prepared in private training schools, — a one-year course. This training was generally found insufficient, and in the early days the kindergartens frequently suffered from inadequately trained teachers. Efforts were made in many directions to supply the deficiencies of the teachers employed in the kindergarten. Lectures on the principles of education, lessons in method and in the practical work of the kindergarten were given, and in 1884 regular post-graduate courses were established, and are now carried through the entire school year. The teachers come in large numbers every week, and there has been a marked increase in efficiency among the teachers, and the standards of the work have been perceptibly raised.

In 1889 Mrs. Shaw offered to the Boston Normal School the services of a teacher in Kindergarten Theory and Practice, and in 1890 the School Committee established this department of training, and there are now in the service of the city twenty-six graduates of the kindergarten training in the Normal School. This year one-third of the entering class of the Normal School elected both Kindergarten and Primary Courses, showing a marked increase of interest in the subject, and the advantages to the city of teachers trained in both kindergarten and primary work will soon be felt in these departments.

It has been said "that the advance in education has been due to the recognition of the educational ideas lying dormant for a century or more." It is the recognition of the educational ideas of Froebel, one of the most conspicuous of the early reformers, that has brought the kindergarten forward and justified its claim to a place in the public-school system; but it is not only because its principles and methods underlie all good teaching that this claim is made. Its value is proved by the testimony of teachers, who state that children

who come to them from the kindergarten have increased powers of observation, expression, and concentration; are more attentive, alert, intelligent, and accurate; have clearer ideas, greater imagination, more reasoning power, skilfully trained hands; are more original; speak better English; are more thoughtful, while morally are more obedient, self-reliant, honest, generous, truthful, courageous, orderly, unselfish, and industrious, and socially they are more polite, they have a greater respect for others, and physically are stronger, more energetic, and more supple. This accords fully with the testimony of Superintendent Seaver, who, in his report to the Board in 1888 on the subject of establishing kindergartens, speaks as follows:

On the intellectual side, the effects of kindergarten training are shown in highly quickened powers of observation; in the possession of clear ideas, derived chiefly from systematically guided observations; in the power to express these ideas well in conversation; in the great readiness with which the art of reading is learned; in the very considerable knowledge of numbers and their relations objectively acquired; in knowledge of forms and colors; in a considerable development of discipline of the active powers, as displayed in the comparative ease with which the manual arts of drawing, writing and slate work are acquired. All this is not only a preparation for the intellectual training usually regarded as the peculiar function of the schools, but a very substantial advancement in that training.

Second, on the moral side the effects of good kindergarten training are traceable in the first manifestations of a sense of justice: One child learning to recognize the rights of other children as limitation on his own rights; in habitual acts of kindness and generosity, evincing a disposition to yield to others what may gratify them but cannot be demanded by them as a matter of right; in polite manners; in truthfulness, its opposite never being fostered by harsh discipline; in an eager desire to please the teacher; and finally, to refer to a characteristic which may certainly be ranked as a virtue, in personal cleanliness and neatness.

LALIAH B. PINGREE, *Chairman*,
EMILY A. FIFIELD,
ELIZABETH C. KELLER,
WILLIAM T. EATON,
WALTER GILMAN PAGE.

SCHOOL DOCUMENT NO. 18—1894.

REPORT

OF THE

COMMITTEE ON SCHOOL HOUSES

ON SUBJECT OF

NEW SCHOOL-HOUSES NEEDED IN BOSTON.

DECEMBER, 1894.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

In School Committee,

Boston, Nov. 27, 1894.

Ordered, That the Committee on School Houses be authorized to report in print on list of new school-houses needed.

Attest:

PHINEAS BATES,

Secretary.

REPORT.

In School Committee, Boston, Dec. 27, 1894.

The Committee on School-Houses, who were requested to furnish the Board "a full list of new school-houses now needed in this city both to be established and rebuilt, with the probable cost thereof," respectfully present the following report:

The committee have tried to make this report as brief and concise as possible, but we find, in order to present the full list of needed school-houses, accompanied as they should be with facts and information concerning their necessity, will require considerable space. This document should be considered as one issued in a great public exigency, and will we trust, be of some service for reference.

We have followed the instructions given in the order, and present a list of buildings "now needed." We have not anticipated future wants, or taken advantage of this opportunity of including any merely desirable improvements. We present a list of buildings only, which, after thoughtful deliberation, we believe are required at this time. Many of these buildings have been needed for several years, and have been previously reported upon and requests for the necessary appropriations sent to the City Council. It would be strange if, in so large a list, some of the estimates presented did not prove insufficient, but we have sought and obtained such advice and information as was available, and have endeavored to exercise due care and consideration in determining the estimated cost of the buildings.

The powers of the School Committee with regard to fur-

nishing new school-houses are, we believe, generally misunderstood by the people, and it seems to us but just to the Board that a statement should be made of their responsibility in this matter.

Previous to 1875 the school buildings were practically in the control of another department of the city government. The care of the buildings, the appointment, defining the duties and fixing the compensation of janitors, were in charge of the Public Building Department of the City Council. The location, plans, and erection of school buildings, and the care and control of said buildings after erection, were outside the School Committee. By the Acts of 1875 (chapter 241), providing for the reorganization of the School Committee of Boston, the powers of the School Board with regard to school-houses were increased. Section 5 of said Act provided that the School Committee "shall appoint janitors for the school-houses, fix their compensation, designate their duties, and discharge them at pleasure." This Act practically placed the school-houses when erected under the care and control of the School Committee. Section 6 of the Act above referred to delegated to the School Board the authority in regard to the selection of sites, and the approval of plans for new buildings, and for alteration in old ones. By chapter 297 of the Acts of the year 1889, section 6 of the Acts of 1875 (chapter 241) was repealed and the following substituted therefor:

"SECTION 6. The School Committee shall have full power and authority to order to be made on the school buildings any additions, alterations, and repairs, for school purposes, which it deems to be necessary; to provide temporary accommodations for school purposes; to select, bond, and purchase the land required for school buildings and their yards; and to fix finally and conclusively the plans for school buildings to be erected; *provided*, that nothing herein shall authorize said School Committee, in behalf of the city

of Boston, to expend or contract to expend for said purposes any money in excess of the amount previously appropriated therefor."

This increased power given to the School Committee is important and is gratefully appreciated, but it does not remove the chief cause of anxiety on the part of the Board; namely, the delay in securing needed school-houses. The School Board has the power to select and purchase school sites and to fix finally and conclusively the plans for school buildings to be erected, but they cannot "expend or contract to expend for said purposes any money in excess of the amount appropriated therefor." The money for such purposes must first be appropriated, and these appropriations can be granted only by the City Council. When a new school-house is needed the School Board can ask the City Council for the necessary appropriation for a site and building. Here their power ceases until the money is appropriated. The School Board is distinctly responsible with regard to the selection and purchase of school-sites, but there is a question as to how far they should be held responsible with regard to the erection of school-houses after they have approved the plans for said buildings. This Board is not responsible apparently for the specifications or the contracts for the erection of the buildings. The School Board determines the size of the building, and the City Architect is consulted relative to the probable cost. The estimates of the City Architect are invariably adopted and the City Council requested to grant the amounts called for in such estimates. After the plans are approved, the specifications are prepared by the City Architect, and the contracts for the erection of the buildings are made by the City Architect and the Mayor. We have no objections to urge against this method, but it should be understood that the School Board should not be held responsible for any criticisms as to the cost of school buildings, or of their method of construction, as to

materials used or the manner in which the work is done. When a building is completed, it is turned over to the School Board. We wish to state that without exception the City Architects have been most courteous, have consulted with the Committee on School Houses, and received their suggestions with deference. If the Architect finds additional sums are needed to complete a school-house, he notifies the School Committee of that fact, and the School Committee requests the City Council to grant such additional appropriations.

It is, in our opinion, the duty of the School Committee to keep the City Council informed of the needs for new buildings, and to ask for necessary appropriations. The manner in which this duty has been performed by this Board is shown by our records and those of the City Council. The difficulty in obtaining necessary appropriations has for the most part been great, and long periods of time have elapsed between the asking for and the granting of such appropriations. This difficulty seems to increase as the wants for new school-houses accumulate. In March, 1884, the School Board asked for appropriations for the Hugh O'Brien and Thomas N. Hart school-houses. The Hugh O'Brien School-house was completed and occupied in September, 1887. The Thomas N. Hart school-house was occupied in December, 1889, five years and nine months after the first request for the building was sent to the City Council, and two years after the plans of the building were approved. Other similar delays could be readily cited, notably that of the Roxbury High School-house. In the six years 1884–1890 only two new Grammar school-houses were erected.

In 1889 the demands for new school buildings were so great that some immediate action seemed necessary. The Committee on School Houses of that year were requested to report what permanent and temporary accommodations were needed. In their report submitted to the Board in Febru-

ary, 1889, the committee state: "A large part of the recommendations contained in this report have been previously acted upon and forwarded to the City Council." Of the three Grammar school buildings called for in the report of 1889, one, the Henry L. Pierce, was completed in 1891; another, a new building near Boylston Station, was not erected, as the recommendation was reconsidered; the third, Gibson School-house, is now in process of erection. There were seven new Primary school buildings called for in the report: (1) Adams District, the Plummer School, was finished in 1892; (2) Bunker Hill District, B. F. Tweed School, was completed in 1892; (3) Prince District, St. Botolph-street School, was completed in 1891; (4) Lowell District, Wyman School, was completed in 1892; (5) George Putnam District, Williams School, was completed in 1892; (6) Charles. Sumner District, no provision has been made for this building; (7) Robert G. Shaw District, Baker street, new building, a lot has been purchased, but no appropriation for the building has yet been made. Since 1889 four new Grammar school-houses have been erected, and ten new Primary school buildings. It has been the custom of the School Board to present early in each year a list of the most pressing needs for new school-houses, which is sent to the City Council. The requests are repeated each succeeding year until the necessary appropriations are granted; the list being annually augmented by the addition of the new wants.

There is one fact we wish to state not in a critical spirit, but with the intention of showing where the real determining power of providing new buildings may be said to rest. In these annual statements of new buildings needed, it has been the custom to present them so far as is possible in the order of their greatest need. The City Council exercising its right in the granting of the appropriations may allow appropriations for some new requests, and take no

action on those which have been standing for several years, and are placed at the head of the list. In other words, the City Council determines in granting the appropriations which of the buildings asked for by the School Board shall be provided for.

It may be desirable to allude, in addition to what has been said, to the reasons, in our opinion, for the present large demands for school accommodations and new school-houses. The natural growth of the city shows the necessity of providing for from one thousand to fifteen hundred additional pupils each year. Other reasons for the need of new buildings are (1) the shifting of population occasioned by the encroachments of business upon the homes of the people; (2) the changing of location of large manufacturing plants to the suburbs, and the consequent change of residence of those employed in such establishments; (3) the giving up of old buildings and providing new school-houses in those parts of the city to which the people, for various reasons, are compelled to go; (4) the necessity of keeping the buildings in proper condition; the altering and rebuilding of those which are worn out and have become unfit for further use. The establishment of public kindergartens, manual training shops, and cooking schools, most of which are accommodated in the regular school-houses, is to a considerable extent responsible for the present demand for increased school accommodations. There are 47 Kindergartens, with 84 teachers, attended by 2,738 pupils. All but eight of the Kindergartens occupy rooms in the regular school buildings. There are thirteen manual training shops and fourteen schools of cookery, all but four of which are located in the regular school-houses. While it is true the pupils attending the manual training shops and cookery schools are pupils in the regular schools, yet separate, specially fitted rooms have to be assigned for the use of these special schools. But what seems to us to be the strongest

reason for this great demand for additional school accommodations at this time is, that the increased wants of our schools have not been provided for from year to year, but have been allowed to accumulate. We wish emphatically to be understood as not speaking in a spirit of captious criticism of the City Council. Limited as they are as to the amount they can raise by taxation, restricted in their borrowing capacity, with the great pressure from all the departments of the city government for appropriations, their task is anything but an enviable one. Other departments besides the Schools must receive considerate attention. Health, Police, and Fire Departments must be supported. Life and property must be protected. We think the schools should have their proportionate share of the moneys raised. We reluctantly perform what we feel is our duty when we state, that, however desirable and beneficial public parks may be, the consideration of the public schools should be paramount to that of public parks. We are of the opinion that the grand and beautiful park system of Boston would be still grander, more beautiful, and more gratefully appreciated if it should receive attention after the children of our city are provided with suitable and proper school accommodations.

In the great pressure for additional accomodations, and on account of the delays in providing new school-houses, it has been necessary to secure hired rooms wherever they can be found. The expedients to which we have been compelled to resort have been frequently stated in our reports, and are well known generally by the people in the districts where it has become necessary to resort to this extremely undesirable method of housing the pupils. As a general rule, these hired rooms are objectionable from every point of view. They are wanting in proper sanitary arrangements and ventilation; they are often imperfectly lighted and heated; are usually unpleasantly located; are inconvenient, and not adapted to

school purposes. They are also very expensive. We are paying now about $20,000 annually for hired rooms for upwards of two thousand children. This sum at five per cent. is the interest on $400,000, an amount which is about one-fifth of that required under the most liberal estimate to provide even in our present strait all the school buildings we need.

While other cities in the country are wisely and prudently looking forward and providing for the future in the matter of school-houses, Boston has been looking backward, and putting off the demands not only of the present, but of the past, and the school needs are accumulating rapidly. The wise policy of preparing for the future is fast becoming an impossible goal. By right and vigorous action now the mistakes and delinquencies of the past may be blotted out, and a judicious policy adopted of providing for our yearly needs by the wise expenditure of a comparatively small amount annually. Under the operation of such a policy, the present condition of our school accommodations would seem to be impossible.

We would end our report here, did it not seem to be our imperative duty to refer to the subject of the sanitary condition of our school-houses. We know that there are existing evils in the sanitary condition of some of our school-houses, especially in the older buildings, though these evils are by no means so prominent and unnoticed as some would have us believe. This Board has not been unmindful or negligent of the interests of the pupils or of their physical welfare. Frequent attention has been called to the subject of sanitary improvements in our school buildings, and our records show how many of these cases have been investigated, and the City Council requested to make the necessary improvements, and to grant appropriations for this purpose. Every year since 1889 a special appropriation has been requested of the City Council to improve the sanitary condi-

tion of our school buildings, under existing laws, and every year this amount has been stricken out. In cases of urgent need — and they have been many — the appropriation for ordinary repairs of school-houses has been called upon to meet expenditures for sanitary improvements, an item not properly charged to said appropriation, and the estimates of which are not made up to include such expenditures. No one appreciates more than the School Board the great importance of keeping our school buildings clean and healthful; but to do this requires money, and that we have not been able to secure. We need a special appropriation for this purpose. Probably $100,000 could be expended at once, and to the greatest advantage, in improving the sanitary condition of our school-houses.

The list of needed buildings is as follows:

NORMAL AND HIGH SCHOOLS.

Normal School. — Several years ago the need of increased accommodations for this school became manifest, and the committee on that school becoming restive and anxious, still exercised the most commendable patience, when their wants were set aside in order that the grammar and primary schools might first be considered. But as the years passed and the inconvenience and annoyance became almost unbearable, and being still met with the increased needs of the grammar and primary schools, they felt it their duty in 1891 to make an earnest effort for the relief of the school. From that time to the present, although the necessity for increased room is readily conceded, no real advance toward the desired relief has been made. Proposition after proposition has been suggested. The City Council has been asked to grant an appropriation for the enlargement of the building, but this suggestion is no longer thought desirable. There cannot be any reason for explaining at any considerable

length the necessity for increased accommodations. Two or three classes quartered in one hall and reciting at the same time; classes arranged in the corridors and teachers' private rooms; no convenience whatever for gymnastics, manual training, physical laboratory work, drawing, kindergarten instruction, and work in elementary science. There seems no need to continue. The school is seriously and sadly crippled, and its immediate relief is of absolute importance. Full consideration has been given to the proposition to enlarge the present building, but it has been found impracticable to do this on account of the existing building laws, which would make it very expensive and would not afford sufficient room. It has been proposed to move back the primary school-house on Appleton street, and erect a new building on the front of the lot. This plan has its disadvantages, is expensive, and would probably render only partial relief for a few years. It was then thought a site in another location, in the suburbs, for instance, might be chosen. While this suggestion is attractive to some on account of the opportunity of securing a commodious and desirable location, it is opposed by others on the grounds of distance from the central portion of the city, inconvenient transportation of pupils, and its remoteness from the Public Library, Art Museum, Natural History Rooms, etc. The committee in charge, after long deliberation, propose that the present lot be enlarged by the purchase of adjoining estates on West Canton street; and the erection of a suitable building for the Normal School, adapted to the purposes of the school, and with some view to its increase in size and usefulness. The estimated expense will be about $225,000.

English High School. — There are twenty-four classrooms in this building, with a seating capacity for eight hundred and forty pupils. Twenty-three of these rooms are occupied by the seven hundred and ninety-five pupils belonging, and one room is used to store books and other

property of the school. The head-master anticipates that the number next year will exceed nine hundred pupils, and the limit of accommodating them be passed. We make no recommendation at present with regard to this school, but think its condition should be stated.

Girls' High and Latin School. — When this building was erected for the "Girls' High and Normal School" it was intended to provide for nine hundred and twenty-five pupils. This year the building has been made to accommodate ten hundred and ninety-five pupils of the Girls' High and Latin Schools. This has been accomplished in part by reducing the aisle and front spaces in certain of the large class-rooms; and in part by filling certain recitation rooms with desks and using them both as class-rooms and recitation-rooms. At the present time all the rooms in the building (including basement and attic) that can be made available for purposes of study or recitation are in use. If these schools should grow, even a little, beyond their present limits, it will be necessary either to resort to colonization, or to submit to physical and mechanical conditions so unfavorable as to render good work extremely difficult, if not impossible. As a result of the present crowded condition of the building, the work of the two schools already suffers from many disadvantages, of which we state a few: (1) there is no room in the building available for use as a gymnasium; (2) there is but one room available for use as a drawing-room for the junior class and as a botanical laboratory; accordingly during that part of the year in which drawing and botany are taught simultaneously, the drawing classes have to give up the drawing-room and do their work in the regular class-rooms, which are unsuitable for object and model drawing for the reason that the fixed desks make it impracticable for the objects grouped for drawing to be seen by all the members of the class at once; (4) the small room in the basement, which is used for a zoölogical laboratory, and which is the

only room available for the purpose, is cramped in size, poorly lighted, and inadequately ventilated. Owing to the deficiency of rooms, pupils have to stay during study periods in rooms in which recitations are going on. The natural remedy for these and other disadvantages would seem to be the erection of a new building for the Girls' Latin School. As the present membership of the Girls' Latin School is thirty larger than last year, and has now reached two hundred and sixty-one, it seems likely that the number will soon rise to three hundred. Two years ago the Society of the Church of the Unity, whose estate adjoins the lot of the Girls' High School building, desired to sell its property. This estate, if still available, would furnish a favorable site for a new Girls' Latin School building. This committee, following strictly the wording of the order referred to them, have included this statement, considering it to be worthy of the attention of the Board. The only reason for not submitting a request for a new building for the Girls' Latin School at this time is that the list is very long, and it is possible to defer action on this matter for a year at least.

Roxbury High School. — This school is full to overflowing. There are seats for five hundred and forty-six pupils, and the register shows five hundred and sixty belonging. More than twenty pupils have been refused admission. This crowded condition exists, notwithstanding the fact that the present middle class is unusually small. Next year the head-master estimates that he will be forced to refuse admission to at least fifty, and after that from seventy-five to one hundred annually for the next few years, with a regular annual increase thereafter. In the judgment of this committee adjoining land should be purchased and the building enlarged so as to provide six class-rooms. Estimated expense, land and building, $50,000.

Dorchester High School. — New building. There are at present nine teachers in this school. There are six class-

rooms, and when the hall is divided, as was recently ordered by the Board, there will be one more class-room. The senior class-room contains fifty-six pupils. Into two rooms, each of which is 32 × 19 feet, and adapted for twenty-eight pupils, there are placed forty pupils. Two long, narrow rooms, 19 × 40 feet, hold from forty to forty-four pupils each. These rooms are mostly lighted from one end, and on dark days the inner seats are not available. The remaining room is the only properly sized room in the building, and accommodates forty-two pupils. The rooms are so crowded that when pupils are transferred from one room to another for recitations, other pupils must be turned out and sent somewhere else. When the hall is partitioned, the instruction in military drill must be given outside the building, probably at the Old Town Hall, half a mile away, and which is too small for company movements, and cannot be heated in cold weather with the present heating-apparatus. Two years ago a protest was sent to the Committee on High Schools against its use as a drill-hall. The City Council of last year (1893) asked the School Committee to include in the estimates for 1894 a sufficient sum for a drill-shed for the school; but the communication was presented at the final meeting of the Board in December last, too late to be acted upon that year.

The hall of the school building, or so much of it as remains, is in constant use for physical exercises, drawing, music, and class-room work. This necessitates a constant changing of settees, drawing-desks, piano, and seats, often two or three times a day. This is mostly done by the pupils. Should a class enter the school next year of only the average number, it will be necessary to make another room in the hall, which will leave no room for physical exercises, music, drawing, etc. A physical laboratory is a serious need, but there is no place for one in the building. There are no adequate clothes-rooms. On the lower floor ninety to one hundred

girls are compelled to use one small room with but one door. But few can get into the room at once. On the upper floors there are no clothes-rooms. There are but five water-closets for one hundred and seventy-five girls, and four for the boys. These are in the cellar. There are no retiring-rooms for the teachers. There are but two sinks which can be used, — one for boys and one for girls. There is no corridor passing from one side of the building to the other on the lower floor. Every one is compelled to pass through a class-room. There are no closets in the class-rooms. The chemical laboratory is in the basement, and this is dark on all except bright days. The building was erected to accommodate about one hundred and fifty pupils. The number of pupils in the month of September for the past seven years was as follows: 1888 — 164; 1889 — 185; 1890 — 218; 1891 — 238; 1892 — 242; 1893 — 240; 1894 — 272. In 1890, the City Council was requested to enlarge the building. The appropriation was not granted. An appropriation of $12,000 for a site has been granted. The enlargement of the old building is impracticable and would be very expensive. A new building is needed at once. The estimated expense for a new building is $100,000.

East Boston High School. — The present building used by the school is an "annex" of the old Lyman School-house, having six rooms on three floors, and a hall and chemical laboratory opening from the third floor in the old building. The hall has a seating capacity of about two hundred, and is used for physical exercises and instruction in music. It is too small for exhibition purposes, and it has been condemned by the Inspector of Buildings for certain purposes on account of a weakening caused by the weight of the books in the Public Library, which is on the floor below. The laboratory is small and ill-arranged. Of the six rooms remaining, one is used for instruction in physics, and cannot, therefore, be used for anything else.

Another room is used for drawing and recitation. This leaves but four rooms for the seating of the pupils. With another class as large as the entering class of this year another room will be imperatively needed. A drill-hall is hired at a distance from the school at an annual expense of $400. The school building is poorly arranged internally, and its situation on a busy street makes a portion of it useless for recitation between twelve and one o'clock daily. At all times and in every room the hum of business and the noise from the streets penetrates the building and distracts the attention of the teachers and scholars. A new building on elevated land comparatively free from noise should be provided. In January, 1893, it was proposed to enlarge the lot by purchasing adjoining property and erecting an addition to the building on said land. This committee visited the premises at that time, and were of the opinion that additional room should be provided. Last February the Board asked the City Council for an appropriation of $30,000 to purchase land and erect an addition to the building. The appropriation was not granted. In the opinion of the Committee on High Schools, in which we concur, a new building should be erected. The estimated cost for a site and suitable building is $120,000.

West Roxbury High School. — In June, 1892, the lot of this school building was enlarged by the purchase of adjoining land. This land was purchased with the intention of erecting an addition to the present building. The need for increased accommodations has become so urgent that this addition to the building should be provided for as soon as possible. The building was originally intended to accommodate one hundred pupils, and cannot properly provide for more than one hundred and twenty. The school opened this year with one hundred and seventy pupils. It has been extremely difficult to find room for this number in the schoolhouse. Classes are required to recite in sections of forty

and forty-five, and the subject of ventilation during the winter is one of anxiety. There are no recitation-rooms; the hall and even the master's office have to be used for this purpose. Dressing-rooms have to accommodate double the number of girls they ought, and the sanitaries are wholly inadequate. Every available corner of the building is occupied, and it will be necessary next year to "colonize" a class at some distance from the school-house, which will be demoralizing to the tone and spirit of the school. There can be no question of the rapid increase in the number of pupils. In five years the four grammar schools in Ward 23 have increased 30 per cent.; the graduates of these schools have increased 60 per cent.; the West Roxbury High School has increased in the same time 70 per cent. On account of the removal of the Roxbury High School to its present location, graduates of the Lowell School are coming to the West Roxbury High School. The estimated expense of a proper building is $100,000.

High School Building, South Boston. — The question of establishing a high school in South Boston is one which has been before the Board several times, but no definite favorable action has been taken until this year. In February, 1894, a communication was received from the Common Council requesting the School Committee to report as to the advisability of erecting and maintaining a high school building in South Boston. In March, 1894, the Board received a petition, signed by one thousand and ninety-nine residents of South Boston, asking for the establishment of a high school there. The Committee on High Schools, to whom the subject was referred, submitted a special report to this Board — November 13 — in which they make the following statement: "In reporting favorably upon the advisability of establishing a high school in South Boston, we deem it only just to remind the City Council that existing wants should be provided for, and no new high

school established until some of our present unsanitary and overcrowded buildings have been succeeded by entirely new structures. This committee are unanimously of the opinion that it is desirable to establish a high school as soon as the finances of the city permit." This report was accepted by the School Board. In submitting the needs of the present, your committee are of the opinion that it is only right and proper that the high school building for South Boston should be included in this report. The estimated expense for a site and building is $175,000.

Mechanic Arts High School. — Completion of building. The part of the building that was designed to contain the chemical and physical laboratories, the library, and the principal's office has not been erected. The argument used to justify this omission was that the laboratories would not be used the first year, and that the school could be organized in the main portion of the building while the wing was in process of erection. In September, 1893, the School Board urged the completion of the building according to the original plan, and requested the City Council to grant the necessary appropriation. In January, 1894, the City Council was requested to appropriate the sum of $45,000 to complete the building in accordance with the original design. No appropriation has yet been granted, and the school has reached a point where the laboratories are indispensable. This school has suffered to a very great extent, and its work seriously interfered with on account of delays in its construction, furnishing, and equipment. The need of some immediate action is unquestionable, and any further delay in completing the building would be unwise and harmful to the best interests of the school. Estimated expense, $45,000.

GRAMMAR AND PRIMARY SCHOOLS.

First Division. — East Boston.

Cudworth Primary School-house. — Enlargement of the lot. This is the new primary school-house on the corner of Paris, Havre, and Gove streets, East Boston. There is at present a space of only five feet from the rear of the building to the line of the lot, and in the opinion of this committee it is essential that additional land should be purchased to ensure the proper light and air for the building, and to reasonably guard against danger from fire from neighboring buildings in the rear of the school-house. The attention of the City Council was called to this matter in November of last year, and a request at that time for an appropriation of $5,000 for the purpose was not granted, and a similar request made last February suffered the same fate. Your committee believe that this matter should receive early attention. The estimated expense is $5,000.

Emerson District. — New Primary school-house. This district is rapidly growing, there being a large increase (over a hundred children) in the number of pupils during the past year. The opportunity for growth in this section of the island is great, especially in the direction of Orient Heights and Beachmont. There are two primary classes at present accommodated in two rooms in the Bennington-street Chapel, which should be provided for east of the railroad, and thus lessen the danger to the lives of these little ones who are now compelled to cross the railroad tracks four times each day. A lot of land (20,000 square feet) should be secured east of the railroad, in the neighborhood of the chapel on Bennington street, and a new six-room primary school-house erected thereon. The estimated expense for the lot is $5,000; and for the building, $42,000.

Chapman School-house. — Enlargement of lot and building. There is in the judgment of the Division Committee

a pressing need for increased accommodations for this school. Additional land should be purchased, the estimated expense of which is $5,000, and an additional wing to the building erected to correspond to the wing built a few years ago. The estimated expense of this new wing is $24,000.

Second Division. — Charlestown.

Frothingham District. — New Primary school-house. In 1892 a lot of land on the corner of Adams and Chestnut streets was purchased. To give precedence to other wants in the city which seemed more pressing at the time, the request for an appropriation for a new building was deferred. Last February (1894) the Division Committee urged that a new building should be provided, and the City Council was requested to appropriate $60,000 for an eight-room primary school-house. No action has as yet been taken by the City Council. In our opinion this new building is much needed. The estimated expense is $60,000.

Harvard District. — New Primary school-house. A new primary school-house in this district is needed, and the demand for it is becoming more pressing each year, and ought to be provided for in the near future.

Warren District. — New Primary school-house. There are at present in this district two old primary school buildings which should be abandoned as soon as possible, and a new building erected in their stead. The Mead-street School-house was built in 1847 and is much out of repair; the sanitary condition of the building is unsatisfactory; the building is old, worn out, and unfit for further use as a school-house. The Cross-street School-house is a small wooden building, the date of the erection of which has long since been forgotten. It is old, out of repair, and with inadequate ventilation and sanitary arrangements. There is no yard, and the children are compelled to play upon the street, where dangers from accidents abound. In a special report

submitted to the Board last March, this committee stated that it was their opinion that a new primary school-house to replace these two old and unfit buildings was a necessity, and upon their recommendation the City Council was requested to appropriate the sum of $80,000 for a site and new eight-room school-house. Nothing has been heard from this request. Estimated expense for site and building, $80,000.

Third Division. — North and West Ends.

Chardon-court School-house.— New building. This school-house was built in 1864, is three stories high, and contains six rooms, five of which are occupied by primary classes and one by a kindergarten. The building is located at the end of Chardon court, a narrow lane leading from Chardon street. Much has been said in criticism of the location, surroundings, and general unfitness of the school-house. A communication was received from the Common Council in March, 1893, requesting the School Board to report as to the expediency of purchasing a new site and erecting a new building for the school. In their report submitted in response to this request, this committee stated that this school-house would not be occupied unless we were obliged to keep the children out of the streets. In the report of this Board on school accommodations, presented to the City Council last February, an appropriation of $100,000 for a site and building, to take the place of the Chardon-court school-house, was requested. We believe that this new building is one of the most pressing needs of the city to-day, not only on account of the urgency of removing the children from Chardon court, but of the relief it will afford to the overcrowded school buildings in that section, and the opportunity of furnishing suitable quarters for some of the children who are now housed in unsuitable hired buildings. Estimated expense for site and building, $100,000.

Hancock District. — New Primary school-house. The

rapidly increasing growth of the school population at the North End has called the attention of the Board for the past few years to the necessity of increased school accommodations there. The school-houses in that section are overcrowded, and repeated requests for additional room have been made. The City Council was requested in February, 1893, to appropriate $100,000 for a site and new primary school-house in the Hancock District. The appropriation was not granted. In February, 1894, the request was repeated, but no appropriation has yet been made. In the Hancock and Eliot districts, nearly two hundred children occupy hired rooms; one hundred and twenty-five kindergarten pupils occupy four rooms in the North Bennet-street Industrial School building, in which building is also located the carpenter shop of that part of the city. The managers of the North Bennet-street Industrial School, who have permitted the use of the rooms in their building without charge for rent or heating, expressed a wish a year ago that other accommodations might be provided for the public-school children, and their building vacated by such children on or before September, 1894. The efforts to provide for the children elsewhere proving unavailing, the continued use of their rooms has been generously accorded by the managers. We should show our appreciation of the public-spirited managers and their sacrifice of their personal plans of using their own building by making an earnest, honest effort to relieve them of the burden we are imposing upon them, and remove these children at the earliest possible moment. One of the primary buildings in the Hancock District is old and unfit for further occupancy for school purposes. This is the Ingraham School-house, on Sheafe street. It was built nearly fifty years ago, is three stories high, and contains three rooms, one on each floor. When this Board asked for an appropriation for a new primary school-house in 1893, the attention of the City Council was called to this old building, and to

the fact that it was hoped the new building would enable us to abandon the Sheafe-street School-house. Last May the Common Council requested the School Board to consider and report upon the expediency of discontinuing the Sheafe-street building and providing other quarters for the pupils, as the building was considered unsafe in case of fire. The Board reported to the Common Council that this building should be abandoned as soon as other accommodations could be provided for the pupils, and called attention to the report of the School Board of the preceding February asking for an appropriation for a new primary school-house in the Hancock District, which would render the abandonment of the Sheafe-street building possible. We can only repeat what has been urged for the past two years, that a new primary school-house in the Hancock District is an imperative necessity. The estimated expense for a site and building is $100,000.

Wells District. — New Primary school-house. When the attention of the Board was first called to the need of additional accommodations at the West End, two or three years ago, it seemed then that a new primary school-house might not only provide for the children attending the Chardon-court building, but would probably furnish room for the pupils of that part of the city who were unprovided for. However true that might have been two years ago, it must be stated that to-day such an idea must be discarded. The overcrowded buildings of the Wells District, and the large number in outside buildings, and the constantly increasing number of new pupils calls for immediate action. There are two primary classes, containing about one hundred and thirty pupils, located in a hired room in the Chambers-street Chapel. There is a kindergarten, containing sixty-four pupils, located in St. Andrew's Chapel, on Chambers street. The use of the latter room is given without charge for rent. In the primary schools of this district the average number of pupils to a

teacher is sixty, with a surplus of sixteen; the maximum number of pupils to a teacher required by the rules is fifty-six. In the eighteen classes of the district, therefore, there are eighty-eight pupils who should be taken out and otherwise provided for. Your committee are compelled to urge the erection of a new primary school-house in the Wells District. The estimated expense of a site and building is $85,000.

Fourth Division. — City.

Genesee Street. —New Primary school-house. The most pressing need in this division is a new building for the Genesee-street School. After long and careful investigation this committee came to the conclusion that the present site was the best for a school building in this section. The City Council has been requested to take, by right of eminent domain, adjoining property, and we understand the taking of the land is being attended to. It is proposed, as the enlargement of the present building is out of the question, to erect a new six-room building on the same site. The appropriation has been granted, and we trust the building will be pushed to an early completion.

Brimmer School.— Alterations and repairs. This school-house is the oldest of the grammar school buildings now in use in the city, having been erected in 1843. It has been repaired and patched, and to-day is sadly in need of a thorough renovation. It is of the ancient style of school architecture, with small, narrow halls and stairways, and no clothes-rooms. The City Council was requested last June to appropriate $5,000 for alterations and repairs, but the money has not been appropriated. The Division Committee have repeatedly urged the necessity of improving the building, and though we believe this should be done, we have been unable to procure the needed appropriation. Estimated expense, $5,000.

Prince School-house. — Enlargement. In 1889 the yard of this school-house was enlarged. In 1891 this committee was requested to consider the enlargement of the building, but at that time it was thought other more pressing needs should be attended to, and no action was taken to provide for any extension of the building. Under the order and as one of the needs which we think should be provided for is the enlargement of this building. The number of pupils is increasing, and recently the committee in charge were compelled to dismiss many pupils who were not residents of the district in order to make room for those who lived in the district. The assembly hall is not large enough, and there are no accommodations for manual training, cooking, sloyd, and kindergarten classes. An addition to the present building would provide accommodations for these special classes, and could, we think, be erected at a moderate expense. The estimated cost is $25,000.

Fifth Division.

Hyde District. — New Primary school-house. On account of the burning of the Walpole-street School building, it has been necessary to provide temporary accommodations for a primary class and for the kindergarten in the grammar school building. It has been necessary to use a vacant room that will soon be required for grammar school pupils, and to use one of the corridors to provide a place for the children. Some relief for this district should be furnished soon. The rebuilding on the Walpole-street lot is under consideration, and there appears to be some question as to the desirability of using this lot for school purposes. As the matter is under consideration by the Division Committee, we refrain from making any comments on that question. There can, however, be no doubt that a new primary school building to replace the one which was burned should be provided as soon as possible, either on the site of the old building or in

some other location. A six-room primary building is required, and the estimated expense is $50,000.

Sherwin District. — New Primary school-house. There is but one primary school building int his district, — the Ira Allen School, on Avon place. This building was erected in 1851, and an addition erected in 1881. There are four rooms in the building, all of which are occupied. There is a class of sixty pupils in Day's Chapel, corner of Parker and Ruggles streets. This latter building is hired by the city at an annual rental of $350. It is understood that the property is in the market and liable to be sold at any time. There are about fifty children waiting for the establishment of a kindergarten, all in the same locality. To properly provide for the children of that section an eight-room building is necessary. It has been suggested that the Ira Allen School-house might be enlarged, but in the judgment of this committee it is impracticable, expensive, and it would be unwise to do so. A new building of eight rooms should be erected on the present site of the Ira Allen School-house, on Avon place. Estimated expense, $60,000.

Sixth Division. — South Boston.

Lawrence District. — New Primary school-house. There are at present in the Lawrence District two primary school-houses — the Mather, on Broadway, and the Parkman, on Silver street — which ought to be replaced by a new building or buildings. The Mather building was erected in 1842. It is an old building, the rooms are small, the floor-space in each room is about two-thirds the area of a modern school-room. It has been necessary to provide by special legislation for a smaller number of pupils to a teacher, in that building, than the regulations require. The lot is small; the ventilation is poor, notwithstanding that considerable expenditures have been made to improve the ventilation. The Parkman School-house, on Silver street, erected in 1848,

is also an old building, located on a narrow street, and on an exceptionally small lot of about 5,000 square feet. Some of the rooms are too dark to be used, and the others are poorly adapted to school purposes. The School Board early in this year received communications from the Common Council and the Board of Aldermen concerning these buildings. A special committee of the Common Council visited the Mather School-house, and in their report, which was sent to the School Committee, stated that the building was old and in an unsatisfactory sanitary condition, and that its location, being on a lot adjacent to that of the police station, was objectionable on moral and physical grounds. Upon receiving these communications, the Division Committee, to whom the matter was referred, visited the premises and suggested the erection of a new building to replace both the Mather and the Parkman School-houses. The Committee on School Houses concurred in the opinion of the Division Committee, and the City Council was requested to appropriate $100,000 for a site and building; but, notwithstanding the interest manifested by the City Council, when called upon for the appropriation to carry out their suggestion to replace these two old buildings with a new school-house, the necessary amount was not granted. A twelve-room primary school-house would, in the judgment of the Division Committee, provide for the pupils attending the Mather and Parkman Schools, and the proceeds of the sale of the property of these schools would reimburse the city to a large extent for the outlay required for the new building. Estimated expense of site and building, $115,000.

New Primary School-house. — There is great need, in the opinion of the Division Committee, for a new primary school-house of six rooms in a central location between the Shurtleff, Thomas N. Hart, and John A. Andrew Districts. Estimated expense for site and building, $50,000.

New Primary School-house, Ward 15. — For two years

past there has been a growing need of a primary school-house between the John A. Andrew District and the Edward Everett District. Both of these districts need additional primary-school accommodations, and a new school-house may be so located, in the vicinity of Harvest street, for example, which will afford the much-needed relief. In our report on school accommodations, presented in February last, the City Council was requested to appropriate $50,000 for a site and building in this section, but the appropriation was not granted. Estimated expense for a site and building, $50,000.

Bigelow and Norcross School-houses. — Enlargement of lots. There is but little yard-room for these buildings, the lots being almost covered by the buildings. In the Bigelow School yard we doubt if the entire school could be placed in the yard even by crowding. In both cases the yard-room is wholly inadequate. These are large buildings, each containing fourteen rooms and a hall. There are over seven hundred pupils in the Bigelow School, and over six hundred in the Norcross School. There are but four grammar school buildings, located on smaller lots than the Bigelow and Norcross School-houses. These four buildings are in the heart of the old city, and while it must be said that undoubtedly it would be better for the health of the pupils and teachers, and better for the work of the schools, yet a large expense would be required to enlarge these lots at this time.

The largest grammar school-house lot in the city is the Mather, at Dorchester, 132,500 square feet; the next is the Tileston, Dorchester, with 83,640 square feet; then the Henry L. Pierce, with 66,342 square feet. Thirty-nine grammar school-house lots contain more than 20,000 square feet each, and of these twenty contain 30,000 square feet or more each. The estimated expense for enlarging these lots is $50,000.

Seventh Division. — Roxbury.

Dudley District. — New Primary school-house. In 1889 the lot of the Vernon-street School-house was enlarged by the purchase of adjoining land. It was the intention of the Board to enlarge the lot for the purpose of erecting a new building to take the place of the old one. As in so many other cases, the inability to obtain appropriations, and the necessity of furnishing accommodations for those who were unprovided for, called for the postponement of this new building. Accordingly, a class was accommodated in the dwelling-house on the land purchased to enlarge the school-house lot. In June, 1893, upon the urgent request of the Division Committee, this committee took the matter into consideration, and, convinced of the unwisdom of further delay, they included in their report of last February (Document 1, 1894) a request to the City Council for an appropriation of $65,000 for a new eight-room building on the Vernon-street School site. The appropriation was not granted. The Vernon-street building was erected in 1849, and enlarged in 1861. There are four rooms in the building. The sanitary condition of the building is unsatisfactory. There has been no question in the minds of committee, master, and parents that a new school-house has been needed there for years; but we cannot build without money, and the granting of appropriations rests wholly with the City Council. An eight-room building is very much needed, the estimated expense of which is $65,000.

Hugh O'Brien District. — New Primary school-house, Howard avenue. The need for additional primary-school accommodations in the Hugh O'Brien District has received much attention from the Board and its sub-committees for several years. The need became so pronounced in 1893 that it was evident something should be done. It was the opinion of the Division Committee and of this committee

that the enlargement of the building was out of the question, and, adopting the suggestion of the City Architect, it was then thought desirable to erect a new building in the rear of the present one on the same lot. In October, 1893, this Board asked the City Council to appropriate $45,000 for a new building, and in their report on school accommodations, last February, they repeated the request. Nothing has been heard from either. In considering this matter again, it has occurred to this committee that it might be well to select some other location for the new school-house than the lot on Howard avenue. The wisdom of having small school buildings in different locations in large and growing sections instead of larger buildings, or of smaller buildings near each other or on the same lot, seems to us worthy of careful consideration. The question of locating a new building is sometimes determined by the existing circumstances, such as the great demand for the building, and the opportunity to save the price of a new lot by using vacant land of some school-house lot. The present Howard-avenue building was erected in 1862, and contains six rooms. If a new site should be selected with a view to accommodating other sections of the district, and thus favor the children as much as possible with regard to the distance to be travelled by them in going to and coming from school, it might better provide for the pupils of the district. There can be no possible doubt of the need of a new building in this district, and its location is a matter which can be determined later. To erect on the lot of the Howard-avenue building would require an expenditure of $45,000, and if a different site were purchased, it would probably require an additional sum of $10,000.

Lewis School-house. — Alterations. For more than four years certain alterations and repairs have been needed in this building, requiring an expenditure of about $5,000. The City Council was requested, in 1893, to appropriate that

amount for the purpose, and the request was repeated last February (1894). Some years ago a part of two class-rooms was partitioned off to provide a master's office, thus decreasing the size of the class-rooms. The dressing-rooms attached to these class-rooms are unlighted, and have no means of ventilation except through these class-rooms. In stormy weather the wet clothing of the children occasions a most disagreeable and unhealthful condition of the atmosphere in these rooms, and this should be remedied. There is no adequate storage-room for the supplies of the school, and no proper sanitary arrangements for the teachers. This much-needed improvement in the building, and which is of so much importance to the health of the pupils and teachers, should not longer be deferred. Estimated expense $5,000.

Lewis District. — New Primary school-house, Munroe street. The present building, erected in 1854, is two stories high, and contains two school-rooms. A right of way from Bower street has recently been secured, which has proved to be of great advantage to the pupils in shortening the distance for many of the children, and making it possible for many of them to avoid the electric-car tracks. The need for a larger building to accommodate the pupils in the neighborhood of this school has been felt by the committee in charge for several years, and has now become a pressing want which should receive early attention. The present site could be utilized, and a new building of six rooms could be erected at an expense of about $42,000.

Eighth Division. — West Roxbury and Brighton.

Gardner street. — New Primary school-house. This building is proposed to take the place of the Baker-street Schoolhouse. In the first report on school accommodations of this Board, Feb. 12, 1889 (School Document No. 1, 1889), the City Council was requested to erect a new school-house

in place of the Baker-street building, which was then spoken of as unfit for school purposes, and should be condemned. The building is very old, having been erected in 1855, and had been practically unfit for use for many years previous to the above request to the City Council. It is situated less than one mile from the Dedham line, far from any other school. It is a small wooden structure containing one room. The people of that section have felt bitterly their need for a suitable school, and have presented petitions to this Board from time to time urging their claims to consideration. The School Board have annually called the attention of the City Council to this matter, and have annually requested an appropriation for a new building. In 1891 the appeal for an appropriation for a site and building was strongly urged, and the appropriation for a site was granted and a lot purchased on Gardner street; but the appropriation for a new building has not yet been granted. A four-room wooden building is needed, and the estimated expense is $22,000.

Beech street, Roslindale. — New Primary school-house. This district is growing rapidly. It is over a mile beyond the Charles Sumner School, towards Dedham and Hyde Park. The need for this school building existed in 1889, and was included in the report on school accommodations presented to the City Council that year, and the request for an appropriation has been repeated each year since. In 1891 the City Council appropriated the money for a site, and in May, 1891, the School Board passed an order to purchase the lot. Subsequently, on account of some question in the title of the property, the City Council was requested and did take the lot by right of eminent domain. In 1892 it was thought a four-room building would be large enough, and the City Council was requested to appropriate $25,000 for the purpose. As the appropriation was not granted, the School Board in repeating its request the next year (1893) asked for a six-room building. The Charles Sumner District is

suffering for proper and adequate school accommodations. Large sums are annually paid for the renting of hired rooms which are wholly unfit for school purposes. The request for an appropriation to the City Council last February (1894) was placed on file with former requests. It will be seen that this building which was asked for first in 1889 has not yet been provided, and in this district alone, at the present time, not only is this building needed, but two other new primary buildings are called for. Estimated expense for a wooden building, six rooms, $30,000.

Roslindale. — New Primary school-house, west of railroad. In December, 1892, the attention of this Board was called through a petition of parents to the danger to their children because of express trains at school hours, and the necessity for the children to cross the tracks in going to and coming from school, and asking that a new primary school-house be provided for the western portion of the district in Roslindale. This committee gave immediate attention to the petition, and after investigation, upon their recommendation the City Council was requested in February, 1893, to appropriate the sum of $6,000 for a site for a new building. The appropriation for the site was not granted, and the request was repeated last February (1894), but has not yet been granted. There is need for a six-room wooden building, and the estimated expense for site and building is $40,000.

Forest Hills. — New Primary school. The present building was erected in 1870, and contains two rooms. It is not in a suitable location, is in need of repairs, and complaints have been made concerning the sanitary condition of the outbuilding. The proposed change in the line of the railroad will require alterations and improvements, which, as stated in their recent report, this committee think it would be undesirable to make. A larger building, more centrally located east of the railroad at Forest Hills, is needed. It is advisable to abandon this building and provide a new six-

room primary school-house in a more suitable location. The estimated expense for a site and building is $50,000.

Wyman School-house. — Enlargement of building. This building, in the Lowell District, was erected in 1892, and contains six rooms. The Lowell District is rapidly increasing in the number of pupils, and we anticipate that very soon another school-house, possibly a new grammar building, will be required. At present there are three classes (152 pupils) occupying hired rooms, and another hired room will be required in February next. It was proposed in May last to enlarge the Wyman School-house by adding two rooms to the building, and the City Council was asked to appropriate $10,000 for the purpose. It is now recommended by the Division Committee that the building be enlarged by adding four rooms, a proposition which meets the approval of this committee. The estimated expense of this addition is $20,000.

Aberdeen. — New school-house. This section (sometimes called Englewood) is far removed from any school building. Since 1891, petitions have been received from the residents of that section for school accommodations. In May, 1893, the City Council requested the School Board to consider and report upon the expediency of purchasing land and the erection of a building thereon. In their report the School Committee stated that the subject had been under consideration for some time, and that it was expedient to provide a school-house in that locality. In February last, the City Council was requested to grant an appropriation for a site and building. An appropriation for a site has been granted by the City Council, and a new building is much needed. A four-room wooden building will, we think, provide the needed accommodations for grammar and primary school pupils. The estimated expense for the building is $22,000.

Allston. — New Primary school-house. A new primary school-house of two rooms, which can be extended by the

addition of two more rooms, is needed east of Harvard street, near Brighton avenue. This is the recommendation of the Division Committee. It seems to your committee that considering the rapid increase in the number of school children in Allston that it would be wise to erect a four-room wooden building at once. The estimated expense for site and building is $28,000.

Allston. — New Grammar school-house. The committee in charge urge strongly the erection of a new grammar school-house of eight rooms and a hall near the brick primary school-house on North Harvard street. Estimated expense of site and building, $75,000.

Washington Allston School. — Increased accommodations. For some time the question of the enlargement of this building has been before the Board. It was thought the Allston Club-house, which adjoins the school property, could be purchased for $25,000, and made available at once, with moderate expense, to accommodate at least three classes. In June last the City Council was requested to appropriate $25,000 for this purpose, but no appropriation has been made. The Division Committee very strongly urge that the club-house be purchased as the district needs immediate relief, and upon the purchase of this property classes can be immediately provided for. Estimated expense, $25,000.

Ninth Division. — Dorchester.

Harris District. — New Grammar school-house. There has been a growing need for a new grammar school building in this district for several years. In 1892 the City Council was requested to appropriate $9,000 for a site for a new building. This request was repeated in 1893, and again repeated in February, 1894. It was hoped two years ago that the site might be purchased, and the appropriation for a new school-house granted the next year. This was also

the hope of the committee last year. No appropriation has yet been made. The need for this building is so pressing that not only an appropriation for a site, but also for a new building, must now be asked for. The district is growing rapidly. Every room in the building is pressed into use; even the attic, which is low-studded, with poor light, and no ventilation, has been fitted with desks, and pupils are placed there. Several pupils have been turned away, and the number of such pupils is increasing. The need for this new building was desirable five years ago, and to-day is a pressing necessity. Estimated expense, site and building, $110,000.

Field's Corner. — New Primary school-house. A new primary school-house in this section is particularly needed. In December, 1892, a large petition from the parents and residents of that section was received calling attention to the almost total lack of school accommodation, and since that time the attention of the committee in charge has been frequently called to the growing need for a new building. The City Council, upon the earnest request of this Board, appropriated $50,000 for a site and building. The lot was purchased, but the balance of the appropriation being insufficient for the building, inroads have been made into the balance to help out other buildings wanting small amounts, until it now becomes necessary to ask for a new appropriation for a building. Estimated expense, $42,000.

For reference we give the list of buildings and the estimated expense in each case:

Normal School, site and new building	$225,000
Roxbury High School, enlargement, site, and building .	50,000
Dorchester High School, new building	100,000
East Boston High School, site and building . . .	120,000
West Roxbury High School, enlargement of building .	100,000
South Boston High School, site and building . . .	175,000
Carried forward	$770,000

Brought forward	$770,000
Mechanic Arts High School, completion of building . .	45,000
Cudworth School, enlargement of lot	5,000
Emerson District, new Primary School-house, site and building	47,000
Chapman School, enlargement of building and land . .	29,000
Frothingham District, new Primary School-house, Adams street, corner of Chestnut street	60,000
Warren District, new Primary School-house, site and building	80,000
Chardon-court School, site and building	100,000
Hancock District, new Primary School-house, site and building	100,000
Wells Dist., new Primary School-house, site and building,	85,000
Brimmer School, alterations	5,000
Prince School, enlargement of building	25,000
Hyde Dist., new Primary School-house, site and building,	50,000
Sherwin District, new Primary School-house . . .	60,000
Lawrence District, new Primary School-house, site and building	115,000
Shurtleff District, new Primary School-house, site and building	50,000
Ward 15, new Primary School-house, site and building .	50,000
Bigelow and Norcross School-houses, enlargement of lots,	50,000
Dudley District, new Primary School-house . . .	65,000
Hugh O'Brien District, new Primary School-house, site and building	55,000
Lewis School, alterations	5,000
Lewis District, Munroe street, new Primary School-house .	42,000
Gardner street, West Roxbury, new Primary School-house,	22,000
Roslindale, Beech street, new Primary School-house .	30,000
Roslindale, west of railroad, new Primary School-house, site and building	40,000
Forest Hills, new Primary School-house, site and building .	50,000
Lowell District, Wyman School-house, enlargement . .	20,000
Aberdeen, new school-house	22,000
Allston, new Primary School-house, site and building .	28,000
Allston, new Grammar School-house, site and building .	75,000
Allston purchase of Allston club-house for school purposes,	25,000
Harris District, new Grammar School-house, site and building	110,000
Field's Corner, new Primary School-house . . .	42,000
	$2,357,000

It will be seen that a very large sum of money will be required to provide for the buildings now needed. It would probably be difficult, if not impossible, for the City Council to provide for so large a sum in the loan bills of one year, and it has been suggested that a petition be sent to the Legislature for the passage of an Act which will enable the city to raise the necessary sum for new school-houses and sites outside the debt limit. This committee are of the unanimous opinion that the Legislature should be asked to take special action in the present emergency.

Respectfully submitted,

RICHARD C. HUMPHREYS, *Chairman.*
THOMAS F. STRANGE,
WILLIAM T. EATON,
EDWARD H. DUNN,
GEORGE R. FOWLER.

SCHOOL DOCUMENT NO. 19—1894.

ANNUAL REPORT

OF THE

SCHOOL COMMITTEE

OF THE

CITY OF BOSTON,

1894.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1894.

In School Committee,

Boston, December 27, 1894.

Ordered, That five thousand copies of the report of the Committee on Annual School Report for 1894 be printed.

Attest:

PHINEAS BATES,

Secretary.

REPORT.

The committee appointed to prepare the Annual Report of the School Committee for the year 1894 respectfully submit the following report:

STATISTICS.

The school-year in Boston begins in September and closes in June. The statistical reports are published semi-annually — one covers the first five months of the school-year, and is issued in March; the other covers the last five months of the school-year, and is issued in September. The financial year ends January 31, and the reports of the financial committees of the Board are published in March. The annual school report covers the municipal year, and is issued in December. Following the custom of previous committees, we give below the statistics for the year ending June 30, 1894:

Number of persons in the city between five and fifteen years of age, May 1, 1894	76,139
Whole number of different pupils registered in the public schools during the year ending June 30, 1894: boys, 38,105; girls, 36,223; total	74,328

REGULAR SCHOOLS.

Normal School. — Number of teachers . . .	11
Average number of pupils belonging . .	189
Average attendance	182

Latin and High Schools. — Number of schools	11
Number of teachers	130
Average number of pupils belonging	3,559
Average attendance	3,364
Grammar Schools. — Number of schools	55
Number of teachers	766
Average number of pupils belonging	32,422
Average attendance	29,629
Primary Schools. — Number of schools	494
Number of teachers	494
Average number of pupils belonging	26,354
Average attendance	22,827
Kindergartens. — Number of schools	46
Number of teachers	83
Average number of pupils belonging	2,575
Average attendance	1,861

SPECIAL SCHOOLS.[1]

Horace Mann School for the Deaf. — Number of teachers,	12
Average number of pupils belonging	97
Average attendance	84
Evening Schools. — Number of schools	16
Number of teachers	174
Average number of pupils belonging	5,205
Average attendance	3,398
Evening Drawing Schools. — Number of schools	5
Number of teachers	27
Average number of pupils belonging	559
Average attendance	491
Spectacle Island School. — Number of teachers	1
Average number of pupils belonging	17
Average attendance	14

[1] There are fifteen Manual Training Schools and fourteen Schools of Cookery, but as the pupils of the regular public schools attend them, they are not included in these tables.

RECAPITULATION.

Number of schools:	
Regular	607
Special	23
Number of teachers:	
In regular schools	1,484
In special schools	214
Average number of pupils belonging:	
In regular schools	65,099
In special schools	5,878
Average attendance:	
In regular schools	57,863
In special schools	3,929

SCHOOL SYSTEM.

The public-school system of Boston comprises 54 Kindergartens, 499 Primary Schools, 55 Grammar Schools, 8 High Schools, 2 Latin Schools, 1 Normal School, and 1 Mechanic Arts High School. In addition to these schools, the following special schools are maintained: Horace Mann School for the Deaf, 1 Evening High School, 16 Evening Elementary Schools, 5 Evening Drawing Schools, 15 Manual Training Shops, and 14 Cooking Schools.

SCHOOL COMMITTEE.

Previous to 1789 the schools were under the direction and supervision of the Selectmen. In September, 1789, a committee of one from each ward was appointed at a town-meeting to draft a new system for the organization and government of the schools. This committee presented their report October 16,

recommending that the number of schools be seven, and that they be placed under the charge of a School Committee composed of the Selectmen, and one from each ward, to be chosen annually by the town. In 1822 the city was incorporated. The City Charter provided that the School Committee should consist of the Mayor and Aldermen, and twelve other members, one from each ward, elected annually. In 1835 the City Charter was amended, providing that the School Committee should consist of the Mayor, the President of the Common Council, and twenty-four members, two from each ward in the city, who should be elected annually. The revised City Charter of 1854 provided that the School Committee consist of the Mayor, the President of the Common Council, *ex officio,* and six inhabitants from each ward. There were twelve wards. The charter provided that one-third of the members of the Board should be elected annually for a term of three years.

By the annexations of Roxbury, Charlestown, Dorchester, West Roxbury, and Brighton, the number of wards was increased, so that in 1875 the School Board numbered one hundred and fourteen members in addition to the Mayor and the President of the Common Council. By a special act of the Legislature, approved May 19, 1875, the School Committee was reorganized, and it was provided that the School Committee should consist of the Mayor, who should be *ex officio* chairman of the Board, and twenty-four members, elected at large by the people, eight members to be annually elected for a term of three years. In May, 1885, the City Charter was

again amended. By the act then passed, the Mayor's connection with the Board as a member was dissolved.

The present School Board consists of twenty-four members, elected at large by the people, eight members being annually elected for a term of three years.

The officers of the School Board are a President, Secretary, Auditing Clerk, Superintendent of Schools, and not exceeding six Supervisors.

SUPERINTENDENT AND SUPERVISORS.

By the Act of 1875, reorganizing the School Committee, it was provided that the School Board should elect a Superintendent of Schools, and a Board of Supervisors, consisting of not more than six members, who should hold their office for a term of two years. It was further provided that the Superintendent should be a member of the Board of Supervisors, and, when present, should preside at their meetings. The School Committee in providing the duties of these officers adopted the plan of an advisory Superintendent and an executive Board of Supervisors. As was natural, the plan adopted being different from any other plan of supervision in operation in other cities, there were some who were opposed to it.

Since the establishment of the Board of Supervisors, questions relative to the way in which the most effective work of that Board could be secured have been presented. Upon the approach of the time for the election of Supervisors questions have arisen concerning the necessary number of these officials, and their duties, and able and interesting

reports have been presented at such times, but the general plan originally adopted has not been materially changed until the present year. At a meeting of the School Board held January 11, 1894, an order was passed, "that a committee of five members of this Board be appointed by the Chair to take into consideration what, if any, changes in the duties, at present assigned to the officers of the Board, may be made, to the end that greater efficiency may be secured in the administration of the affairs of the schools of this city." At the next meeting of the Board the special committee was appointed, and immediately began the consideration of the subject. In June of this year this special committee submitted a report. In their report the committee, after alluding to the high reputation our schools have enjoyed, state:

> But this success has been achieved, as your committee have discovered, in the face of limitations of administration which would have sorely tried any school system in the hands of less able supporters. . . . The limitations to which we refer have arisen, as we find, from a conscientious interpretation by the School Committee in past years, of the duties imposed upon them by the law which makes this Board wholly responsible for the administration of the public schools of our city. This responsibility has been construed as rendering it obligatory on members of the committee not only to give attention to affairs of legislation, but also to largely assume executive functions in the educational departments of school-work. This has been demonstrated by the manner in which the management of special departments has been placed in the hands of sub-committees, who, in the absence of any general executive agent of the Board, have carried on the work of these departments, even to the minutest details, at a sacrifice of time and attention that ought not to be expected of members of the School Committee.

In alluding to the duties of the Superintendent, the special committee state, that while required by the regulations to inform himself in regard to the public-school system in general, and on the condition of the schools of this city in particular, no means are provided whereby he shall be systematically supplied with information concerning the schools. Nobody reports to him on these matters. No system of reports from Supervisors, masters, or special instructors are at his command. It is true he has access to the reports of special committees, and those made by the Supervisors to the Board, but he has no one whom he can authoritatively detail to look up facts needed for any special purpose; and, wanting information of this kind, he has only to betake himself personally to the school or locality where inquiry is to be made. The only executive authority heretofore given to the Superintendent is that of dismissing the schools on account of teachers' meetings or of stormy weather. The committee continue:

> But your committee is persuaded that the time has come when the office of Superintendent of Public Schools of Boston should be elevated to a position of dignity and responsibility commensurate with its significance and importance. No longer should its incumbent be held in undignified subordination. Rather let him be placed as the true executive head of the schools, responsible to the School Committee and to the public for the successful operation of the department of instruction committed to his care.

The special committee state in their report that they believe the Supervisors should be relieved of some of the duties which have hitherto so largely engaged their time and attention, and assigned to higher and

more important work suited to their ability and educational experience. Relieved of some of their present duties, the Board of Supervisors, with the Superintendent as its chairman, should constitute the advisory Board of the School Committee, to whom all questions in regard to courses of study, text-books, discipline, or other matters, coming before the School Committee, should be first submitted for consideration and study, and whose conclusions, opinions, and advice, furnished in advance of debate by the Board, would be of great service to the School Committee in the discharge of its legislative duties. In further defining the changes recommended the special committee state:

It will be seen that while large advisory powers will thus be conferred on the Board of Supervisors, the School Committee will be relieved of no portion of the responsibility heretofore resting upon it in determining the policy to be adopted in the administration of the schools. Sub-committees, as now, will have general supervision of special branches of instruction in the schools, looking more particularly to results, while the details of the work will be carried on under the direction of the special instructors in the departments, themselves a part of the great machinery, moving harmoniously under the guiding hand of the Superintendent.

It will be observed that, having discharged their duty as a Board, the members of the Board of Supervisors, as individuals, will enter the executive field under the direction of the Superintendent, each being assigned to a district, where, relieved of much of the duty of examining individual teachers, heretofore devolving upon them, and associated with the several masters of the district in which they are located, they will be able to study the progress and needs of the schools, and lend encouragement and aid to the work in which all are engaged.

The principal changes in the existing plan suggested by the special committee were: (1) The change from an advisory Superintendent to an executive Superintendent; (2) The change from an executive Board of Supervisors to an advisory Board; (3) Providing that the Supervisors when not acting as a Board shall perform their duties under the direction of the Superintendent; (4) Placing the directors and instructors of special schools and subjects in charge of the Superintendent; (5) Providing that all reports heretofore made to the Board of Supervisors be made hereafter to the Superintendent.

The report of the special committee was presented to the Board June 12, 1894, and accepted. The order proposing changes in the rules and regulations to carry out the recommendations of the committee took its first reading at that meeting. At the meeting of the Board held June 26, 1894, the order came up for its second reading, and the subject was laid on the table. As this was the last regular meeting of the Board before its adjournment for the summer, no further action was taken on the order to change the rules and regulations until the first meeting of the Board in September, when the subject was taken up and the order, without any changes, was unanimously adopted by the Board.

NORMAL SCHOOL.

The graduating class, June, 1894, numbered 70. Your committee quote largely from the annual report of the school. This class was the first that has enjoyed the advantages of the two years' course of

study. They received two weeks' additional practice in teaching, and eighteen additional weeks of the theoretical and practical study of their profession. This has enabled them to study some phases of professional work more thoroughly than preceding classes have been able to do. A special feature of the class who graduated last June was the optional courses authorized by the School Board last year. The Kindergarten class was continued under the same general direction as heretofore. All the class, except those who took the course in the Theory and Practice of the Kindergarten, were required to elect one of the other authorized optional courses for the fourth term, and to devote to it ten hours a week, — five of study and five of recitation. The election of courses by the members of the class was as follows: Gymnastics, 11; Elementary Science, 13; Manual Training, 5; Form, Color, and Drawing, 13; Music, 14; Cooking, 1; Sewing 2. Instruction has been given in all these departments except cooking. On account of the insufficient accommodations and inadequate equipment for its work, the school has been seriously hindered, and were it not for the assistance received by outside friends some of the work of the school would have to be dispensed with. The practical work in gymnastics could not have been successfully carried out, as there is no gymnasium in the school, but for the kindness of the Director of the Boston Normal School of Gymnastics. The well-equipped gymnasium of that institution has been placed at the disposal of the special students of gymnastics four

times a week. Much of the success of the course in Elementary Science has also been due to the liberality of the friends of the school. The school itself has no laboratory, possesses no microscopes, and few books other than the elementary text-books, and the problem of how it should give special students competent preparation for teaching seemed very serious. Recognizing the needs of the school, the Society of Natural History generously offered the free use of their collections, their laboratory, — including a compound microscope for each student, — besides instruction from well-known specialists in Zoölogy and Geology. To the Biological Department of the Institute of Technology the school is also deeply indebted. They, too, have generously given the use of microscopes, access to their library, and a large measure of their time.

We extend to these friends of the Normal School, and especially to the Boston Normal School of Gymnastics, the Boston Society of Natural History, and to the Institute of Technology, our grateful acknowledgment of their favors, and the thanks of the School Committee for their interest and generous aid in behalf of the Normal School.

The demand for increased accommodations for this school grows more urgent every year. So much has been said, that there seems no need to repeat the oft-told tale here. If Boston is to maintain a Normal School it should be one which is second to none in the country. A new building, properly equipped for the work of such a school, has long since ceased to be desirable, and is to-day an absolute, pressing necessity.

LATIN AND HIGH SCHOOLS.

In March of the present year a numerously signed petition was presented to the Board asking for the modification of the course of study in the Girls' Latin School. The Joint Committee on High Schools and Examinations, to whom the petition was referred, reported that the prayer of the petitioners should be granted, and the Board of Supervisors prepared a course of study in elementary and advanced German, which was adopted by the School Board. Pupils in the Girls' Latin School are now permitted to take this course instead of the course in elementary and advanced Greek.

For several years lunches have been served to the pupils in some of the High Schools. At the first meeting of the Board in October an order was presented "that the Committee on Hygiene and Physical Training be authorized to prescribe and regulate the lunches furnished in all the schools where lunches are provided for sale." The Committee on Rules and Regulations, to whom the order was referred, reported that the Board could assume no control over the lunches furnished by parents to pupils, but they believed it to be the duty of the Board to provide that no lunches furnished to pupils in our school-buildings, with even the passive consent of the Board, should be of an injurious, unsuitable, or harmful nature; and that the lunches should be furnished at a reasonable cost. The committee presented an order, which was adopted by the Board, "that all lunches sold in public school-buildings

shall be such as are approved by the Committee on Hygiene and Physical Training, and that said committee be instructed to report to the Board a plan for supplying lunches at a proper price." In November, the Committee on Hygiene and Physical Training submitted a report upon the subject, which was adopted by the Board, and that committee was authorized to arrange with the manager of the New England Kitchen to provide five and ten cent lunches for sale to such scholars as desire to purchase them.

GRAMMAR SCHOOLS.

There have been several matters relating to this grade of our schools which have received the attention of the Board during the year, the most important of which are the following, given in the order of their presentation:

Departmental Instruction. — Departmental instruction has been in practice in our schools for many years. In the High Schools, for example, the instruction has been mainly departmental for a long time. In the Grammar Schools, special subjects, such as sewing, cooking, wood-working, and to some extent the regular studies, have been taught departmentally. But there has been no effort made to introduce the departmental plan generally into the Grammar Schools until within a few years. In the annual report of the Board of Supervisors for 1891, the subject was mentioned and the suggestions thereon, contained in said report, were referred to the Committee on Examinations, who

submitted a report to the Board in December, 1893. Included in said report was a special report of the Board of Supervisors on the subject. This special report of the Board of Supervisors recommended (1) that departmental instruction in Grammar Schools be permitted; and that the principals of Grammar Schools be advised to organize, if practicable, the instruction in them departmentally. (2) That the Committee on Examinations be authorized to select two or more Grammar Schools into which, with the approval of the Division Committees in charge, departmental instruction shall be introduced and tried in whole or in part during the school-year 1894–95. The Committee on Examinations indorsed the recommendations of the Board of Supervisors, and presented orders to the School Board embodying such recommendations. As the report was presented at the last meeting of the year, no action was then taken upon the subject. Early in the present year, the report was considered by the Board, and accepted, and the recommendations adopted unanimously, with the exception that the number of Grammar Schools to be selected for the trial of the experiment was limited to nine. Eight of the nine schools have been selected in which the instruction, to some extent at least, is now departmental. We believe there is a deep and general interest in this matter, and the results of the experiment now being tried will be eagerly looked for.

Parallel Courses of Study. — In April last the following order was presented to the Board, and referred to the Committee on Examinations:

Ordered, That the work of the Grammar Schools be arranged in two parallel courses, one to be accomplished in six years and the other in four years; and that the work of the Primary Schools be arranged in two parallel courses, one to be accomplished in three years, and the other in two years.

The Committee on Examinations, to whom the order was referred, submitted a report to the Board, December 11, that it was, in their opinion, desirable to provide the two parallel courses of study for the Grammar Schools. At the same time the committee presented a four years' course of study for the Grammar Schools, prepared by the Board of Supervisors. This course was adopted by the Board. There seemed to be no strong reasons for changing the six years' course, at least for the present. This action of the Board provides therefore two courses of study for the Grammar Schools, one to be completed in six years and the other in four years. This plan also provides two ways in which the course of study may be completed in five years. A pupil may enter upon the six years' course and at the end of three years be transferred to the work of the four years' course and finish in two years more; or he may enter upon the four years' course and at the end of two years be transferred to the work of the six years' course and finish in three years more. The plan of parallel courses of study has been in successful operation in the city of Cambridge for the past two years or more, and the experience in that city has been of great assistance to this Board in formulating the plan for adoption here.

Upon the recommendation of the Committee on

Examinations, the subject of providing parallel courses for the Primary Schools has been deferred for the present.

Enrichment of the Grammar School Course of Study. — At a meeting of the National Educational Association, July 9, 1892, a Committee on Secondary School Studies was appointed. In 1893 the report of this committee (generally referred to as the "Report of the Committee of Ten") with the reports of the conferences arranged by this committee and held December 28, 1892, was published. The Superintendent of Schools of this city has devoted much of his last report to the review of this report of the Committee of Ten, and in closing his report states that the chief part of his report "has been devoted to a consideration of the Report of the Committee of Ten, because in that way could be brought up for discussion and possibly for settlement, so far as our own schools are concerned, the many important questions which that celebrated document has brought to public attention throughout the country."

At the first meeting of the Board in September last the following communication from the Superintendent was received by the Board:

BOSTON PUBLIC SCHOOLS.
SUPERINTENDENT'S OFFICE, MASON ST., Sept. 11, 1894.

MR. FRED. G. PETTIGROVE, *President of School Committee:*

DEAR SIR: The interesting question of enhancing the usefulness of our Grammar Schools by providing in them for the study of Latin, French, German, Geometry, Algebra, and Physics at an earlier age than is now possible under our present school organ-

ization, has, as is well known, received much attention throughout the country; and experiments are now going on, particularly in some towns and cities near Boston, for the purpose of testing the practicability of such studies in the courses of public Grammar Schools. The last report of the Superintendent of Public Schools of Boston was designed to give the School Committee and the interested public full and particular information as to the changes which would be wrought in the public schools of that city, if all the recommendations of the Committee of Ten were carried into effect.

Without now asking the School Committee to consider all the questions that have arisen or might arise in relation to the general subject, I beg leave to submit a proposition looking to an immediate trial this year of some of the proposed enrichments of the Grammar School course. My proposition is this, that the Superintendent of Public Schools be authorized to introduce the studies of Latin, French, German, Geometry, Algebra, and Physics, or any of these, into any Grammar School in which are found teachers able and willing to teach any children whose parents wish them to be taught any of these subjects; and to make necessary changes for the time being in the established course of study so far as such children are concerned; this grant of authority to be temporary merely and solely to ensure the carrying on of the proposed experiments under the best conditions.

From the results of careful experiments far more than from theoretical discussions will come the light by which our future course should be guided.

Very respectfully yours,

EDWIN P. SEAVER,
Superintendent, Public Schools.

This communication was referred to the Committee on Examinations, who reported at the next meeting of the Board (Sept. 25, 1894) that in the opinion of that committee the experiment suggested by the Superintendent in his communication should be tried, and presented an order to that effect. This order

was referred to the Board of Supervisors, who reported at the next meeting of the School Committee (Oct. 9, 1894) unanimously indorsing the suggestions of the Superintendent and recommending the passage of the order presented by the Committee on Examinations. The order was passed by the Board, and later in the year text-books were authorized to carry out the experiment of introducing the studies, recommended by the Superintendent, into the Grammar Schools.

Omission of Diploma Examinations. — In 1893 the question of omitting the diploma examinations was earnestly discussed by the Board. Upon the request of the Board, the Board of Supervisors presented a plan to be substituted for the existing plan of diploma examinations. Recommendations of the Board of Supervisors were also presented with regard to a substitute plan for promotions from the Primary to the Grammar Schools. The Committee on Rules and Regulations, to whom the matter was referred, reported in favor of the plan submitted by the Board of Supervisors, and said plan was substituted, by vote of the Board, for last year. The Committee on Examinations submitted a report in September last on the subject of omitting the diploma examinations this year. The committee state in their report that "while favorably impressed with the results of the experiment thus far, they are of the opinion that it would not be wise to make a permanent change at present, but to continue the substitute plan for another year." The Superintendent gave his opinion that he did not think that the

experiment tried last year of omitting the diploma examinations was enough to be decisive, and that he believed it would be more satisfactory in the end if the experiment could be tried another year. In accordance with the recommendation of the Committee on Examinations, and the opinion of the Superintendent, the Board voted to dispense with the diploma examinations this year, and continue the substitute plan tried last year.

KINDERGARTENS.

Nine Kindergartens have been added to the school system this year, making a total of fifty-four schools of this grade. Thirteen Grammar School districts are not yet provided for, and in five districts additional Kindergartens are needed.

The relation between the Kindergartens and the other grades of schools grows more friendly each year. The principals of the Grammar Schools take more interest, and are beginning to give the Kindergartens the care and attention that they give to the other schools under their charge, and the Kindergartens gain steadily in vigor and effectiveness. The teachers are better equipped, more competent, and more skilful. But much remains to be done, both in and beyond the Kindergartens. The relation to the Primary grades is not as vital as it should be. Sporadic attempts have been made to unite the work more closely, but no real union can take place until the work of the Kindergartens and Primary grades are based upon some continuity of plan which provides for the carrying on of the work begun in the Kindergartens.

Three things seem to be necessary. 1. That as far as practicable; the rule providing that children shall have one year's instruction in a Kindergarten before entering upon the Primary School work should be carried out. 2. That a course of work shall be arranged which will make the transition from the Kindergarten to the Primary School a gradual one; which shall include the subjects of the Kindergarten adapted to Primary work, and of which all teachers recognize the value. 3. That a reduction in the number of pupils to a teacher shall be made so that more individual work may be done with the pupils; and so that a teacher shall not be required to teach, develop, train, help, and be patient with fifty-six pupils of any age, when they are forming habits on which the character of their future work depends.

Your committee have long been of the opinion that when these changes are made there will be a saving of one year or more to the pupils who now take four years to do the work of the Kindergarten and Primary grades. We believe these pupils will enter upon the work of the Grammar grades better prepared than they are now. The question is one of adjustment and not of radical change for either the Kindergarten or Primary work. It is believed that when this adjustment takes place the saving of time will prove that the Kindergartens do not greatly increase the expense of the schools, but add to their strength and efficiency.

One of the most important acts of the Board relating to the successful carrying out of the work of the Kindergartens, and which, in our judgment, will be

of the greatest benefit to this grade of schools, is that recently taken in the establishment of the office of Director of Kindergartens. For some time there has been a conviction in the minds of those who are thoroughly conversant with the methods, purposes, and aims of the Kindergartens, that there was a great need for the appointment of some one of unquestioned ability, knowledge, and experience to whom should be assigned the supervision and direction of the Kindergartens. This long-felt want is now supplied, and we believe the wisdom of the action of the Board in establishing the office of Director will be fully demonstrated.

EXPENDITURES.

It has been the determination of the School Board to permit no just cause to exist for criticism concerning the management of the public-school finances. There is no duty which the Board has more conscientiously performed than that relating to the school expenses. The Rules of the Board provide that the Committee on Accounts (consisting of five members) shall, after conference with the Committee on Supplies (consisting of five other members), annually prepare and present to the Board in print, on or before the last regular meeting of the Board in December, an estimate of the expenses of the public schools for the next financial year. This estimate, after approval by a two-thirds yea and nay vote of the Board, is sent to the Mayor.

These estimates are very carefully made up, showing to the minutest details the amount needed, even to the number of teachers of each rank in the service

and the amount required for each; and the amount for each department of supplies, and incidental expenses.

Any citizen, who desires to do so, can readily inform himself, through the printed reports of the Committees on Accounts and Supplies, how every dollar is expended on the part of this Board.

Every item of expense comes under the personal scrutiny of ten of the twenty-four members of the Board. Every pay-roll and bill of expenditure, after being properly audited by the financial committees of the Board, are sent to the City Auditor, where they are audited by the proper authorities on the part of the City Government before they are paid. It is with the greatest confidence that the Board refers to its record in regard to school expenditures, and cordially invites the most searching investigation as to the manner in which this public duty is executed.

The following table shows the expenditures made for carrying on the schools, exclusive of furniture, repairs, and new school-houses, since the reorganization of the School Board, a period of seventeen years and nine months:

Year.	Expenditures.	Income.	Net Expenditures.	No. of Pupils.	Rate per Pupil.
1876-77 . .	$1,525,687 74	$21,999 03	$1,503,200 70	50,308	$29 88
1877-78 . .	1,455,687 74	30,109 31	1,425,578 43	51,759	27 54
1878-79 . .	1,405,647 60	32,145 54	1,373,502 06	53,262	25 79
1879-80 . .	1,416,852 00	49,090 28	1,367,761 72	53,981	25 34
1880-81 . .	1,413,763 96	73,871 08	1,339,892 88	54,712	24 49
1881-82 . .	1,392,970 19	69,344 08	1,323,626 11	55,638	23 79
1882-83 . .	1,413,811 66	73,278 56	1,340,533 10	57,554	23 29
1883-84 . .	1,452,854 38	79,064 66	1,373,789 72	58,788	23 37
1884-85 . .	1,507,394 03	39,048 26	1,468,345 77	59,706	24 59
1885-86 . .	1,485,237 20	31,213 34	1,454,023 86	61,259	23 74
1886-87 . .	1,485,343 29	33,388 28	1,451,955 01	62,259	23 32
1887-88 . .	1,536,552 99	37,092 81	1,499,460 18	62,226	24 10
1888-89 . .	1,596,949 08	39,585 52	1,557,363 56	64,584	24 11
1889-90 . .	1,654,527 21	39,912 30	1,614,614 91	66,003	24 46
1890-91 . .	1,685,360 28	41,209 06	1,644,151 22	67,022	24 53
1891-92 nine months .	1,295,981 34	30,757 31	1,265,224 03	67,696	18 69
1892-93 . .	1,768,985 64	37,578 66	1,731,406 98	68,970	25 10
1893-94 . .	1,822,052 26	40,709 13	1,781,343 13	71,495	24 92

It will be seen that the cost per pupil for the year 1893–94 was considerably less than that of any of the first four years given in the above table, and was eighteen cents less per pupil than for the previous year, 1892–93.

Since 1889 the power and authority of making the repairs on the school-buildings has been vested in the School Board.

The following table shows the cost of repairs made and furniture provided since 1876–77:

Year.	Expenditures.	Income.	Net Expenditures.	No. of Pupils.	Rate per Pupil.
1876-77	$165,876 72		$165,876 72	50,306	$3 30
1877-78	126,428 35		126,428 35	51,759	2 45
1878-79	114,015 32		114,015 32	53,262	2 14
1879-80	98,514 84		98,514 84	53,981	1 82
1880-81	145,913 55	$205 00	145,708 55	54,712	2 66
1881-82	178,008 88	247 50	177,761 38	55,638	3 19
1882-83	189,350 83	231 00	189,119 83	57,554	3 29
1883-84	186,852 18	300 00	186,552 18	58,788	3 17
1884-85	198,059 11	526 50	197,532 61	59,706	3 31
1885-86	188,435 63	137 50	188,298 13	61,259	3 07
1886-87	171,032 71	295 92	170,733 79	62,259	2 74
1887-88	243,107 89	221 00	242,886 89	62,226	3 90
1888-89	251,736 17	153 00	251,583 17	64,584	3 90
1889-90	262,208 75	850 20	261,358 55	66,003	3 96
1890-91	263,860 16	208 00	263,652 16	67,022	3 94
1891-92 nine months	205,344 27	595 50	204,748 77	67,696	3 02
1892-93	221,905 53	165 00	221,740 53	68,970	3 22
1893-94	190,465 06		190,465 06	71,495	2 66

It will be seen that although the average amount allowed for several years preceding 1893–94 was about $240,000, the amount allowed and spent in 1893–94 was less than $200,000. In our judgment the amount allowed was less than that which was needed.

In December, 1892, the estimates for 1893–94, approved by the School Board and sent to the Mayor, called for the sum of $2,090,320, exclusive of new school-houses. The City Council granted two appropriations for the running expenses of the schools: one of $1,804,000, under the head of "School Committee," and the other, $190,000, under the head of

"Public Buildings — Schools;" making a total of $1,994,000, a reduction of $96,320 from the amount requested by the School Committee. Of this reduction $71,000 were taken from the appropriation requested for repairs, etc., of school-houses. The total amount granted was less by $6,000 than that allowed for the year previous, although the number of pupils in the schools is increasing at the rate of two to three per cent. each year. This fact alone ought to indicate that an increased rather than a diminished appropriation should be allowed. No notice was apparently taken of the special appropriation of $66,200 for extraordinary repairs asked for to comply with the laws of the State, and to furnish improved sanitary conditions of buildings, and to provide better egress and fire-escapes for the school-houses. The amount appropriated, notwithstanding the most strenuous efforts of the Board to keep within the appropriation, left a deficit at the close of the year of $15,254.11, which amount was transferred from other accounts by the Mayor and the City Auditor.

The estimates for this year (1894–95), approved by the School Board and sent to the Mayor in December, 1893, called for an appropriation of $2,192,000, exclusive of new school-houses, and for $90,000 for extraordinary repairs. The City Council made two appropriations for the public schools: one of $1,840,000, under the head of "School Committee," and the other of $190,000, under the head of "Public Buildings — Schools." This was a reduction of $162,000 from the amount asked for the running expenses of the schools, while the special appropriation was as

usual overlooked. The result was, that although the Board tried loyally to meet the great demands made upon it, and every item of expense was most rigidly inquired into, and the strictest economy exercised, at the close of the year we found it necessary to ask for an additional appropriation of $43,000.

We earnestly request the City Council to look very carefully into the estimates presented by this Board. Our record of the past should be some reason for placing confidence in our work, and securing for our recommendations the most careful and just consideration of the City Council.

The cordial and liberal support of the public schools by the people of our city is unquestionable. There can be no doubt of their desire to maintain our schools in the high position they have attained; that due care should be taken to keep our school-buildings in proper repair, and in such condition as will not endanger the health of school children.

SCHOOL-HOUSES.

At no time in the history of our city has the lack of school accommodations been so pronounced as at present. The great need of additional school-houses has become so conspicuous that some special and decisive action should be immediately taken. A strong effort was made by this Board in 1889 to stem the tide, and with the hearty and sympathetic coöperation of the City Council a beginning was made in the right direction, and several school-houses were provided for; but the interest flagged, other

matters seemed to secure the attention of the City Council, and our repeated appeals to carry on the good work were coldly received. Our records and reports testify to the earnestness with which we have called attention to the rapidly increasing demands for more room for our pupils. Had the generous and wise efforts of the City Council of 1889 been continued a few years, our school-buildings would now be in a favorable condition and adequate for the children; but unfortunately such has not been the case, and we find ourselves to-day in a most anxious and deplorable state. A great public exigency exists, and one that cannot be set aside, but must be provided for without delay.

In every section of the city the demands for new school-buildings are great, but more especially so in the suburban districts. The needs of the Grammar and Primary Schools have always been considered first, but at this time the demands of the High Schools, set aside as they have been from year to year, cannot longer be overlooked. But the Grammar and Primary School wants have been allowed to accumulate until they have reached really alarming proportions. The Committee on School Houses have been asked to furnish the Board with a full list of new school-houses now needed in this city, and we understand that a very large sum of money will be required to provide the buildings which are needed.

If it were true that the School Committee had not called the attention of the City Council to the need of new school-houses when their need became known, we should feel it but right that a large part

of the responsibility for the present condition of things should rest upon this Board. But such is not the case. Every year since 1889 this Board has presented a printed report on the subject of school accommodations, containing a list of the new buildings needed. These reports have been submitted to the City Council early in each year, with recommendations for the appropriation of the necessary amounts to purchase sites and erect the buildings. In addition to these reports requests have been sent to the City Council for other wants which have become urgent during the year. These lists submitted each year have not been *full lists* of buildings needed, but those which were in the judgment of the Board absolutely necessary, and upon which immediate action seemed essential. Last February the amount called for in the special report was $898,500, only a comparatively small part of which was granted.

We wish it to be understood that the powers of the School Committee in regard to providing new school-houses are much more restricted than is generally supposed. The School Board cannot purchase school sites or provide for the erection of school-houses until the necessary appropriations are granted by the City Council. The obtaining of these appropriations is replete with delays. Years frequently pass between the time of asking for and the time of the granting of such appropriations. The putting off of the granting of the needed appropriations, and the consequent delay in providing for new buildings, is the chief cause, in our opinion, for the present large demands for new school-houses.

From indications which have come to our knowledge a very large amount of money will be required to supply the school-houses now needed. It will probably be impossible for the City Council to provide for so large a sum as the existing needs call for in the loan bills of one year, and it may be thought desirable to appeal to the Legislature for special authority to raise the required amount.

MANUAL TRAINING.

Recognized as a legitimate part of the school-work, with time allotted to it in the course of study, and having the cordial coöperation and support of the Board and the teachers, the educational and practical value of manual training is no longer a matter of discussion.

In our remarks upon this subject we quote largely from the recent excellent report of the Committee on Manual Training.

The work in this department has been slowly but steadily enlarged and broadened during the last two years. The course of instruction is now progressively arranged from the Kindergartens through the Primary and Grammar grades.

Sewing naturally takes precedence, both because it has been a subject of instruction for many years, and for its intrinsic importance. Its educational value, and the small cost of materials and instruction, give it an advantage over all other forms of manual training. Most admirable results have been obtained since the adoption of a plan or course in sewing two years ago. All the girls in the sixth, fifth, and fourth

classes are required to sew two hours a week. In some schools, usually the girls' schools, sewing is carried on in every class; other schools have it no higher than the third class. Some Primary classes do regular sewing, and in mixed schools boys sometimes join in the work. In seventeen schools the elementary sewing is followed in the first class by instruction in more elaborate needlework, in cutting to measure and by pattern, and in making dresses and other garments. Patterns are draughted from measurements taken, and garments fitted upon members of the class by each other, with very satisfactory results.

The instruction in cooking promises to be equally successful, although having much less scope than sewing, inasmuch as the course of study provides that only girls from the second classes of the Grammar Schools shall receive lessons. The necessity of having rooms specially fitted up as kitchens requires many of the pupils to leave their regular schools and go to other buildings, the distance travelled being sometimes two miles or more and involving much waste of time. There are at present fourteen kitchens connected with the public schools, in which are employed a Principal of Cooking Schools, ten teachers, and three assistants.

It is hardly necessary to rehearse the advantages of this instruction to the ordinary school-girl. The subject of cooking, which is really that of Domestic Economy, including instruction in the care, preparation, and constituents of food materials, means much more than the making of "dishes." The social, hy-

gienic, and economic questions involved in such instruction are of the greatest practical concern, and it is believed that the careful and systematic teaching needed in this branch of study will yield the best possible educational results.

While the girls in the second classes of the Grammar Schools are receiving instruction in cooking, the boys of the same grade are receiving lessons in wood-working. Rooms specially fitted for the purpose are provided. There are at present fifteen of these wood-working shops. A principal and ten teachers are employed in instructing boys from the second classes of the Grammar Schools, this grade having been selected as the first in which systematic teaching in wood-working should be applied. The plan advocated by the Committee on Manual Training included a course of at least three years, taking pupils of the three upper classes, but the amount of money needed for this could not at once be obtained. This year, with the same number of teachers, the work has been extended into most of the first classes in East Boston, Charlestown, and West Roxbury, and two classes in South Boston. It is earnestly hoped that the extension of the work into the first classes of the other schools may be early consummated.

An experiment was tried last year and continued this year which has proved very successful. The girls of the third class in the Bowditch School have been allowed to receive instruction in wood-working at the Eliot School, Jamaica Plain. The master of the school writes as follows: "They are enjoying it

very much, and I regard it as two hours well spent. I am sure I see growth from it in many ways. There are quite a number of small girls in the class this year, and I feared they might not be able to handle the tools, but we have no difficulty on that account. The parents are also pleased with the work. I should be glad if it might become a permanent feature of the programme."

Color-Work. — For some time several of the masters of our Grammar Schools have provided color-work as an agreeable occupation for the boys during the sewing-hour of the girls. They did not propose to establish any change in the school curriculum, but it was thought that, as the sewing-hour was largely spent by the boys in fragmentary exercises, merely to fill in the time, some study might be introduced which, if not strictly educational, would at least have the merit of interesting those who engaged in it. Time, however, and the proper development of the work, has given ample demonstration of its several distinctly educational features. One of the most marked effects is its influence over the character of the pupils, as shown in the discipline of the school. It is admitted by those teachers whose boys are allowed color-work, that its tendency has been to produce good order and regular and punctual attendance. Boys will come to school early, stay late, or spend an entire afternoon on a "one-session day," if allowed to work with color.

The work has passed the experimental period, its intensely practical uses have been seized, and without the restrictive bounds of a "course," with

perfect freedom, but under intelligent guidance, it has reached a stage which demands the favorable consideration of the Board.

MECHANIC ARTS HIGH SCHOOL.

This school was opened Sept. 6, 1893, with 214 pupils in attendance. The building was unfinished, and the classes were conducted for many months in unfurnished rooms, while the work of completing the building was in progress. Conditions more unfavorable to successful teaching are almost inconceivable. Nevertheless, the tireless efforts of devoted teachers, under the leadership of a head-master of exceptional power, conquered seemingly insuperable difficulties.

The school was opened and organized under the direction of Mr. Frank A. Hill, its first head-master. It is difficult to overestimate either the service rendered to the school by Dr. Hill during the first trying year, or the loss which it sustained when the larger interests of the State called him to the office of Secretary of the State Board of Education. Soon after the resignation of Dr. Hill, the Board elected as his successor Mr. Charles W. Parmenter, a well-known educator, with rare attainments and unusual experience in this special line. Mr. Parmenter took charge of the school at the beginning of its second year, in September, 1894.

The American public school has always accommodated itself to the increasing wants of the people, and there can be no doubt that the future of the Mechanic Arts High School is assured. Manual training has demonstrated its value so fully that it cannot fail to

continue an important factor in our educational system, and the experience of similar schools in other cities is strong evidence that this school will be taxed to its utmost capacity as soon as it is completed and adequately equipped.

A complete course of study cannot be formulated until the school has passed its tentative stages, but the main lines upon which the future course will be constructed are pretty clearly defined. There is a strong tendency to confuse the aims of trade schools with those in which manual training is introduced for its educational value, and the distinction cannot be too plainly stated. It should be fully understood that in the Mechanic Arts High School no particular trade will be taught, but great service will be rendered to those who may finally become skilled artisans. The primary object will be to fit boys for the vast number of employments in which mechanical skill and intelligent appreciation of the principles which underlie mechanical processes are essential to the highest success. The training which it will give will be well calculated to reveal to boys their native aptitude and possibilities, and enable them to avoid disastrous mistakes in the choice of occupations. It is confidently believed that such a course will prove the best preparation for the higher scientific and technical schools, and will serve to encourage many boys to seek a thorough scientific education.

In the academic work, special emphasis will be placed upon English and the mathematical branches. The subjects of study will be elementary algebra, plane and solid geometry, advanced algebra or the

elements of trigonometry, physics, chemistry, history, civics, French, and English. The instruction in the shops will include carpentry, wood-turning, pattern-making, forging, chipping, filing, and iron-fitting, and the elements of machine-shop practice.

It is of imperative importance to the success and welfare of the school that its building should be completed and thoroughly equipped as soon as possible. That part of the building which was originally designed to contain the chemical and physical laboratories, the library, and the principal's office, has not yet been erected. Several requests have been made of the City Council to complete the building according to the original plan, but thus far it has been impossible to obtain the necessary appropriation. We sincerely trust that a sufficient sum to complete the building and to provide for the completion of the equipment will soon be granted by the City Council. It is inconceivable that Boston will leave the school unfinished, and thus cripple the latest and most important addition to its educational system.

THE PARENTAL SCHOOL.

The Board is to be congratulated upon the near approach to completion of this school. Admirably situated, its physical surroundings alone will exert a most wholesome influence. The boys committed to the school will be removed from every suggestion of crime and criminals, and while under constant surveillance, they will be cared for in a manner which will show them that the restraint they are under is not punitive, but exercised solely because of some

infraction of school regulations. The great point gained by the establishment of this school is the entire absence of all criminal features. If the Board of Directors of Public Institutions place the management of the school in the hands of men and women of high moral character, sound judgment, strict, but not severe, in discipline, and with special fitness for the work expected of them, no boy will be the worse for commitment to the school. This raises an important question of the care and management of this school. Should this school be under the sole control of the School Board, or should the Board of Directors of Public Institutions continue to exercise the control as heretofore? At present our Board has practically no control, as its control only consists in issuing a certificate of the proper grade to the teacher or teachers employed to instruct the boys. The chairman of said Board of Directors and the chairman of the Truant Officers' Committee of our Board have had several conferences upon this matter, and beyond a doubt the said Board of Directors would be only too glad to transfer to the School Board the entire charge and responsibility for the management of this school. We think it safe to say that the School Board would select quite as competent a body of employees as said Board of Directors, but the remaining details of management would entail upon the members of this Board such an increase of work and care as ought not to be assumed except after the Board had convinced itself that the best interests of the school and the community demanded it. We believe the school will be ready for tenants by Jan. 1, 1895.

TRUANT—OFFICERS.

This body of our servants changes but very little from year to year except in the event of removal by death, or voluntary resignation by reason of old age, and consequently impaired usefulness. We regret to be obliged to record the decease of Hannibal F. Ripley, for more than twenty years one of our most faithful officers.

There is something anomalous in the difference of appointment of a truant-officer and a janitor; the latter is appointed by the Committee on Accounts without any reference to the Board for confirmation; the former is appointed by the Committee on Truant Officers, the appointment passed upon by the Committee on Nominations and by it referred to the Board for confirmation. In our opinion the two classes should be treated alike; either all appointments of janitors should be referred to the Board, or the Committee on Truant Officers should have the power to make appointments without confirmation by the Board.

By an Act of the Legislature, Stat. 1883, Chap. 253, all appointments hereafter made are in compliance with the rules and regulations of the Civil Service Commissioners.

The Board of Health of this city having inaugurated a system of medical inspection of the schools, has also taken upon itself the duty of notifying the masters and head-masters of every case of contagious disease occurring within the different school districts of our city. This is a much-needed reform and for

superior to the old plan of notifying the school officials by postal cards sent by our chief truant-officer; a plan which was prolific in fault-finding and disputes. There is now little delay between the discovery of a case of contagious disease and notifying the master of the school last attended by the child afflicted. Under the present system of medical inspection the danger of spreading any of the contagious diseases like diphtheria, scarlet fever, or small-pox is greatly lessened, as the practised eye of an expert can at a glance tell him whether a child, to all appearances in good health, should be instantly excluded from school, thus often placing a child under medical surveillance who may be already capable of communicating a dangerous disease by mere contact with his schoolmates. Medical inspection has everything to commend it, and we greatly appreciate the work of the Board of Health in our behalf, and hope it will grow in usefulness in years to come.

PENMANSHIP.

The subject of penmanship has occupied a considerable portion of the attention of the Board during this year. In May last a special committee of five was appointed "to consider and report upon the instruction in penmanship in the public schools." This special committee submitted its report to the Board Oct. 23, 1894, recommending the introduction into the schools of the vertical system of writing. The subject was subsequently referred to the Board of Supervisors for consideration and report. As this matter is now before the Board for action, we do not

think it wise for us to give any expression of our opinions upon the subject, and refer to it in this report as one of the important matters which has received the consideration of the Board during the year.

ART-DECORATION OF SCHOOL-ROOMS.

Over twenty years ago, Mr. Charles C. Perkins recommended the formation of an "Art for Schools" society, whose object should be the adornment of school-rooms with reproductions in various forms of works of art; but no organization was formed until about three years ago, when the "Public School Art League" came into existence. The League, with the consent of the School Committee, decorated a room in the English High School-building, one in the Latin School-building, and one in the Rice Primary School-house. The means by which the work was thus begun came from private sources, and the result of the efforts of the League proved an incentive to many persons both in Boston and throughout the country to initiate and carry on a similar plan, the end and aim of which is to educate the taste of the pupil, refine his sense of perception along right lines, to illustrate subjects taught in the class-room, and by association awaken a love for the beautiful in art and nature.

The Agassiz School at Jamaica Plain presents the most advanced and attractive illustration of the great possibilities that lie within the scope of this form of educational work, which, since its inception in Boston in the decoration of the Girls' High and

Normal School-house in 1871, has received less attention from educators than its merits deserve.

In direct connection with the introduction of art objects into our school-rooms, is the subject of proper tinting for the walls, viewed from the artistic as well as the hygienic standpoint. In all rooms which have been decorated, it has been found necessary to change the color of the walls, the original tint not in the least conforming to either of the above particulars.

The School Committee, from the first, has been in sympathy with this work, which tends to brighten the school-life and broaden the pupils' horizon. The Board commends heartily all that has been done in the past, and with a grateful appreciation of the efforts of the League, promises its cordial coöperation for the future.

Closely allied with the object of the Public Art School League is the patriotic action of the Massachusetts Society Sons of the Revolution. In February, 1894, the following communication was received from that Society:

MASSACHUSETTS SOCIETY SONS OF THE REVOLUTION,
BOSTON, February 19, 1894.

To the School Committee of the City of Boston:

The Board of Managers of the Massachusetts Society Sons of the Revolution have this day voted to appropriate the sum of four hundred dollars out of their general treasury, and to assume the responsibility of raising, by individual donations, whatever additional sum may prove to be necessary, for the purpose of placing a fine reproduction of Gilbert Stuart's portrait of George Washington, fittingly framed, in every public school in Boston. This has been done out of the conviction that the rising generation in Boston, being composed largely of the children of those who are not born in this country, need to be specially educated in the patriotic principles and sentiments which befit their destiny as American citizens in the near future;

and that this education in patriotism cannot begin better than by learning, in the impressionable years of childhood, familiarity with the features and reverence for the character of the first great American — "first in war, first in peace, and first in the hearts of his countrymen."

We, therefore, the undersigned, as official representatives of the Sons of the Revolution in the Commonwealth of Massachusetts, and in obedience to their instructions, respectfully petition your honorable Board for leave to carry the above vote into execution, and thus to help plant in the mind and heart of every child in our public schools the seeds of those great public and private virtues which have made George Washington, for all time, the supreme and most illustrious example of true Americanism.

HON. WM. LEVERETT CHASE, *President*,
WM. FRANKLIN DRAPER, *Vice-President*,
HENRY DEXTER WARREN, *Secretary*,
FRANK HARRISON BRIGGS, *Treasurer*,
WALTER KENDALL WATKINS, *Registrar*,
FRANCIS ELLINGWOOD ABBOT, *Historian*,
LEONARD KIPP STORRS, *Chaplain*,
Board of Managers.

ANDREW ROBESON, JOHN WALTER BAKER,
WM. CURTIS CAPELLE, JOHN CHESTER INCHES,
WALTER GILMAN PAGE, JOS. BLANCHARD AMES,
WINTHROP WETHERBEE, SAMUEL SWEET GREEN,
HENRY EDDY COBB.

This generous offer was accepted by the School Board, and an appropriate vote of thanks was unanimously passed. We wish to publicly acknowledge our great indebtedness to the Massachusetts Society Sons of the Revolution, and to assure them of our sincere appreciation of their munificent gift to our public schools. A copy of the portrait of Washington has been hung in every public-school building in Boston, and the example thus nobly set has been followed by kindred organizations in other cities.

It becomes the painful duty of this committee to record the death of three of our most efficient and faithful instructors.

In May the death of Gen. Hobart Moore, late Instructor in Military Drill, was announced. He had been identified with the instruction in military drill in our schools from its inception, and was appointed the first instructor in this department in September, 1862. His earnest and faithful service for nearly thirty-two years, his modest and gentlemanly bearing, and his conscientious devotion to his duties, won the esteem and friendship of the members of the Board, and the respect and love of the instructors who were associated with him, and of the thousands of pupils who have been instructed by him. His record is an honorable one, of which his family and friends may justly feel proud.

Following closely upon the sad intelligence of the death of General Moore came the announcement of the death of Mr. Francis A. Waterhouse, late head-master of the English High School, which was received with great surprise and regret. Mr. Waterhouse had been granted leave of absence for one year on account of ill-health, and was spending his time abroad, where the most favorable reports were from time to time received of the improved condition of his health. Suddenly, near the expiration of his leave of absence, unfavorable symptoms appeared, and soon after the news of his death reached us. Mr. Waterhouse honorably filled the high position he occupied, as head-master of the English High School, for a period of thirteen years. His high character as a man, his devotion, ability, and fidelity as a teacher, secured for him an enviable reputation among committee, teachers, and pupils.

Recently the news of the sudden accidental death fo Mr. Sylvester Brown, late master of the Martin School, was received. Mr. Brown had served as a teacher in our public schools for nearly twelve years, the last five years of which he was the respected and beloved master of the Martin School. We bear willing testimony to the high position Mr. Brown attained in his chosen profession, to his eminent qualities as a man, and to his conscientious discharge of his duties as a teacher. Cut off in the prime of a life which had been so useful and which was so full of rich promise for the future, his loss will be keenly felt, not only by us, but by those who were associated with him in the many educational labors to which he so conscientiously gave his thoughts, strength, and time.

SIMON DAVIS, *Chairman.*
LALIAH B. PINGREE,
THOMAS F. STRANGE.